

Potential Impacts and Proposed Mitigation During Construction

Construction of the proposed IGCC facility includes clearing, grading, and excavation which have the potential to impact surface water through erosion from stormwater runoff. Construction of a new outfall located downstream of the discharge canal, for the new IGCC cooling water and stormwater discharge, may involve the placement of fill or dredging within the limits of Island Creek. New intake and discharge structures and pipelines will be constructed to and from the discharge canal. In addition, two to three transmission line poles may be constructed in the 100-year floodplain, depending on the final site plan.

Potential impacts to surface water during construction will be mitigated in accordance with applicable State and local stormwater regulations. As the disturbed area will be greater than one acre in size, a Water Quality and Quantity Control plan will be prepared in addition to an Erosion and Sediment Control ("E&SC") plan in accordance with General Permit for Stormwater Discharges Associated with Construction Activity. A Notice of Intent ("NOI") will be prepared and submitted to DNREC. Potential impacts of stormwater runoff will be minimized with Best Management Practices including:

- Placing silt fences and hay bales between disturbed areas and Island Creek;
- Block and gravel catch basin sediment filters;
- Covering material stockpiles;
- Placing silt fences, hay bales, and other barrier controls around stockpiles; and
- Updating storm water pollution prevention and spill control plans before beginning construction.

Should a new outfall be required, any construction activities affecting Island Creek will be addressed through application for coverage under a general CWA Section 404 permit with the U.S. Army Corps of Engineers. Potential floodplain impacts will be evaluated and addressed in a floodplain determination consistent with FEMA National Flood Insurance Program ("NFIP") floodplain management requirements. Construction of the transmission line poles will provide the structural integrity required to withstand flood conditions.

Potential Impacts and Proposed Mitigation During Operation

The Indian River IGCC Project will require approximately seven million gallons per day ("MGD") of water withdrawal and discharge approximately two MGD of treated wastewater to the existing discharge canal. The design includes closed-cycle cooling and zero liquid discharge of process wastewater to minimize impacts, exceeding the requirements of existing Federal and State regulations. The Indian River IGCC Project design mitigates potential impacts using:

- Closed-cycle cooling;
- Fiberglass in construction of the cooling tower; and
- Zero Liquid Discharge system for process wastewater.

Overall impacts at the site will decrease dramatically from the reduced water withdrawal and reduced wastewater discharge volume, with the use of closed cycle cooling and zero liquid discharge system for the Indian River IGCC, and with the proposed shutdown of Units 1 and 2. The reduced water withdrawal and discharge will have a corresponding reduction in biological

and thermal impacts to the Indian River. Further, the opportunity to use approximately one million gallons per day of reclaimed water from the town of Millsboro will have an additional corresponding reduction in impacts.

Water Withdrawal

7 Del. Code, Chapter 6010f requires approval of water withdrawals from surface water and groundwater in the State. The primary function of the water allocation regulation is permitting new major surface or ground water withdrawals - those greater than 50,000 gallons per day.

[REDACTED]

The Indian River IGCC Project will not require an increase in the registered water withdrawal from the Indian River. Cooling water will be withdrawn from the existing discharge canal, similar to existing Unit 4. Further, water withdrawal will be minimized by the opportunity to address the City of Millsboro water discharge challenge and use reclaimed water from the City's wastewater treatment plant.

The primary source of fresh water for power cycle makeup water and process water (demineralized water) will be recycled water from the City of Millsboro's waste water processing facility. Two new wells, to be drilled in the vicinity of existing wells A and B, will be necessary to provide potable water and as a back-up to Millsboro's recycled water supply.

Table 5-10 identifies historical and future water withdrawal capacity and the cooling methods. Historical water withdrawal capacity includes Units 1 and 2. Units 3 and 4 will continue to operate with the Indian River IGCC Project. The improvement in efficiency from the Indian River IGCC Project produces a dramatic reduction in water use at the overall site, [REDACTED]

[REDACTED]

Table 5-10 Historical Average Annual Water Use and Future Water Use Comparison

Unit	[REDACTED]	[REDACTED]
Indian River Plant Site (MGD)	[REDACTED]	[REDACTED]
Indian River IGCC (MGD)	[REDACTED]	[REDACTED]
Total Water Usage (MGD)	[REDACTED]	[REDACTED]
Gallons Per Day per MW	[REDACTED]	[REDACTED]
% Total Decrease		[REDACTED]

MGD – millions of gallons per day

Cooling Water Intake and Best Technology Available ("BTA") Analysis

The Indian River IGCC Project will meet the expected BTA standards for cooling water intake structures. The Section 316(b) Phase II final rule (under the Clean Water Act) for large existing electric generating facilities established location, design, construction, and capacity standards for cooling water intake structures to protect aquatic organisms from being killed or injured by impingement (being pinned against screens or other parts of a cooling water intake structure) or entrainment (being drawn into cooling water systems and subjected to thermal, physical, or chemical stresses). The IGCC project is subject to the USEPA's Phase II regulations for existing facilities. Upon adoption of the Phase II final rule, the USEPA provided additional clarification and guidance regarding the definition of "existing" facilities:

"... modifications or additions to the cooling water intake structure (or even the total replacement of an existing cooling water intake structure with a new one) does not convert an otherwise unchanged existing facility into a new facility, regardless of the purpose of such changes (e.g., to comply with today's rule or to increase capacity)...."

For example, the following facility modifications or additions would result in a facility being characterized as an existing facility under today's rule:

- An existing power generating facility builds a new process at its site for purposes of the same industrial operation and concurrently increases the design capacity of its existing cooling water intake structures; and
- An existing power generating facility completely rebuilds its process but uses the existing cooling water intake structure with no increase in design capacity.

The Indian River IGCC Project will be a new process with the same purpose as the existing site; however, there will be no physical modification to, or increase in the design capacity of, the existing cooling water intake structure. Therefore, the Indian River IGCC Project must comply with the performance standards of the 316(b) Phase II rule. In the discussion of the final rule, the USEPA also stated:

"Under §125.94(a)(1)(i) and (ii), a Phase II existing facility may demonstrate to the Director that it has already reduced its flow commensurate with a closed-cycle recirculating system, or that it has already reduced its design intake velocity to 0.5 ft/s or less. If a facility can demonstrate to the Director that it has reduced, or will reduce, flow commensurate with a closed-cycle recirculating system, the facility is deemed to have met the performance standards to reduce impingement mortality and entrainment (see §125.94 (a)(1)(i))."

The Indian River IGCC Project is designed with closed-cycle recirculating cooling system, specifically a mechanical draft cooling tower, and thus demonstrates compliance with the 316(b) Phase II rule. Based on compliance with the 316(b) Phase II regulations a mechanical draft cooling tower is the expected BTA for the proposed IGCC.

Wastewater Discharge

The existing Indian River NPDES permit will be modified to reflect the addition of the cooling water discharge and stormwater runoff from the Indian River IGCC Project using new outfalls. The new cooling water discharge outfall will be located on the existing discharge canal prior to Island Creek.

Characteristics of wastewater discharges will depend on constituents in the Indian River. Water quality constituents are expected to see a limited two to three cycles of concentration due to salinity levels in cooling water intake. A Total Maximum Daily Load ("TMDL") exists for nutrients in

the Inland Bays watershed. The Indian River IGCC Project will not add phosphorus or phosphorus containing compounds to the discharge and will not increase the mass loading of phosphorus. Similarly, effluent limitations for constituents such as temperature, copper, and zinc may be based on site-specific conditions. However, to mitigate potential impacts from copper, chromium, and arsenic, the Indian River IGCC Project cooling tower will be constructed with fiberglass to eliminate discharges of these metals associated with use of wood in cooling towers. As part of the permit application process, compliance with the applicable standards will be demonstrated.

The Indian River IGCC Project will utilize a zero liquid discharge ("ZLD") waste water treatment system for all process wastewater. The treatment system will consist of lime softening pretreatment followed by a steam driven multi-effect evaporator/crystallizer. The ZLD wastewater treatment system is designed to reduce all process wastewater to a low volume filter cake for disposal in an appropriate offsite commercial landfill.

Hazardous Waste and Solid Waste Management

The Indian River IGCC Project will produce high quality marketable fuel feedstock by-products consisting of high grade elemental sulfur, low carbon fly ash, and ultra-low carbon vitrified slag. Sulfur is widely used as a chemical industry commodity feedstock and can be shipped by rail and truck. Low carbon fly ash is a popular feedstock for the cement industry, among others. IGCC slag is a totally inert glassy material suitable for a wide range of synthetic aggregate applications ranging from road bed material to roofing shingles. Each by-product will be marketed and sold into various industrial and commercial markets. Market studies for by-products are presented in this proposal in Appendix 32 (for slag) and Appendix 33 (for sulfur).

Potential Impacts and Proposed Mitigation During Construction

Typical wastes generated during construction of the Indian River IGCC Project are listed below in Table 5-11.

Table 5-11 Expected Wastes During Indian River IGCC Construction

Waste Stream	Management Method
Cleared vegetation	Offsite Disposal
Construction debris	Offsite Disposal
Minor quantities of paint cans, lubricating oils, etc.	Offsite Disposal
Office waste	Offsite Disposal
Waste oils, oily rags, absorbent	Offsite Disposal
Water from construction dewatering	Offsite Disposal

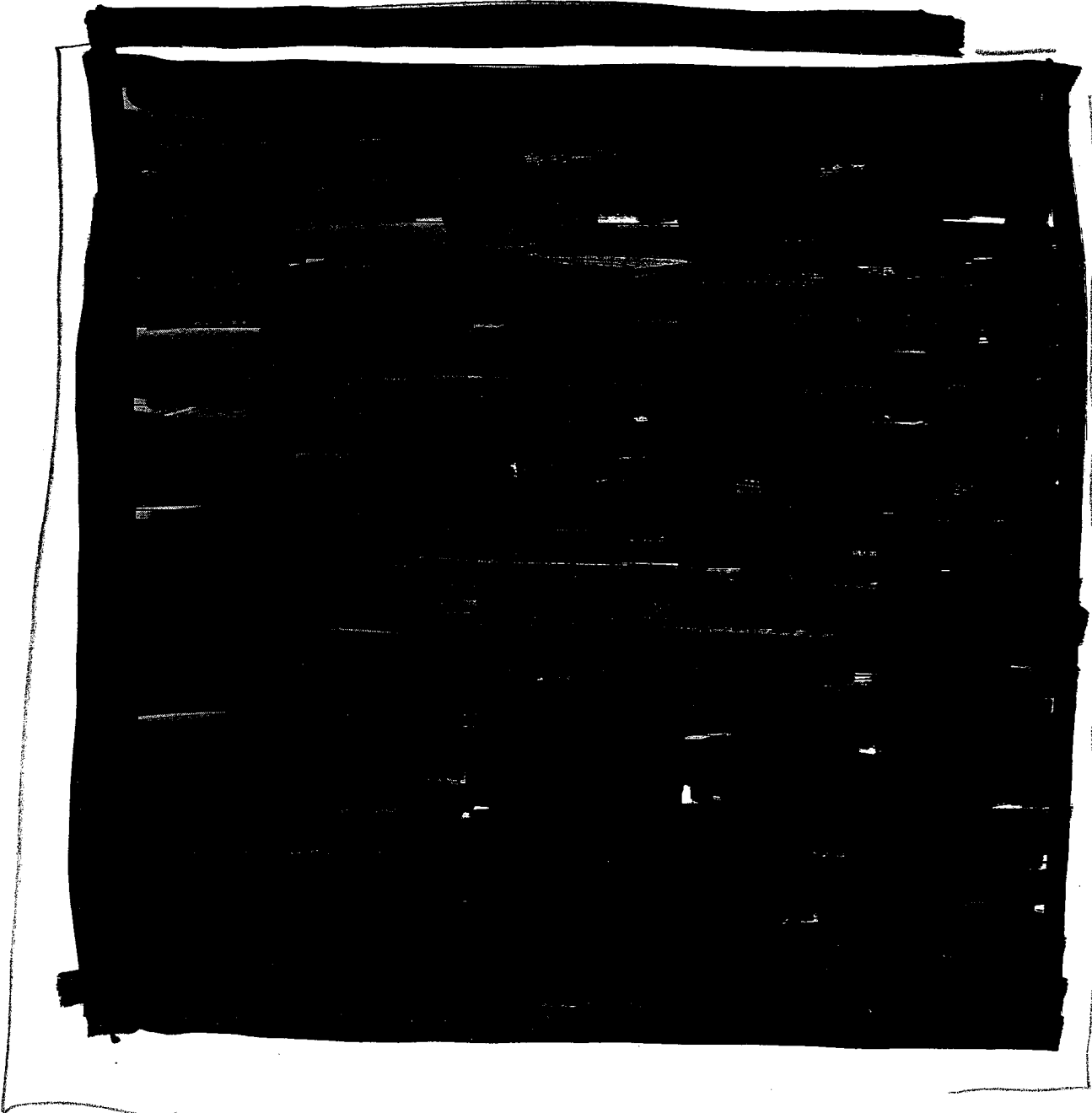
To mitigate any potential impacts associated with this construction activity:

- All materials (hazardous and non-hazardous) and wastes generated from the construction activities will be handled, stored and disposed of in accordance with applicable regulations;
- Strict contract specifications will be established for construction contractors requiring proper management and disposal of materials and wastes;
- Waste generation will be minimized; and
- Excavated soils and materials will be used as fill material within the Indian River IGCC Project area, where appropriate.

Potential Impacts and Proposed Mitigation During Operation

Typical power plant waste streams and management methods are summarized in Table 5-12 below, including wastes that have the potential to be designated as hazardous under Delaware Regulations Governing Hazardous Waste ("DRGHW"). Wastes that cannot be recycled or disposed in the onsite landfill, will be disposed offsite at an approved landfill according to the waste characterization.

The Indian River IGCC Project will not be a Treatment, Storage, and Disposal Facility ("TSDF") for hazardous waste. Any hazardous wastes generated will be characterized and managed in accordance with applicable Federal and State regulations. It is not anticipated that the hazardous waste generation rates will increase to the level of a large quantity generator.



The by-products of the gasification process are summarized in Table 5-13 below. [REDACTED]

[REDACTED] In addition to the existing site, NRG is currently permitting an expansion of the landfill and the application has been filed with DNREC for review. The expansion will accommodate receipt of 100% of the gasifier slag and fly ash depending on the gasifier feedstock. This capacity includes additions of fly ash from Units 3 and 4 at the existing Indian River Plant and assumes that all by-products are landfilled. The expansion will include two cells and is designed for approximately seven to ten years capacity. We anticipate the expansion will be permitted and in operation in early 2009.

Table 5-13 By-Products from Gasification Process

By-Product	Origin and Composition	Estimated Frequency of Generation	Management Method
Slag	Non-oxidized components of coal in glass-like form	Continuous during operation	Sell for reuse or off-site disposal
Gasification fly ash	Non-oxidized components of coal in particulate form	Continuous during operation	Sell for reuse or off-site disposal
Sulfur	Gasifier	Continuous during operation	Sell or off-site disposal

To mitigate any potential impacts associated with operation of the Indian River IGCC Project:

- All materials (hazardous and non-hazardous) and wastes generated from the construction activities will be handled, stored, and disposed of in accordance with applicable regulations;
- Aqueous ammonia used in the SCR system is expected to be less than or equal to 19%;
- Proper storage and segregation will be provided for all wastes; and
- Waste generation will be minimized.

Land Impacts

Wetlands

The presence of regulated wetlands at the Indian River facility was evaluated through examination of U.S. Fish and Wildlife Service National Wetland Inventory ("NWI") maps, historic reports, and a site visit. The U.S. Army Corps of Engineers ("USACE") regulates any dredge or fill activities which may occur within the wetlands area, as defined by the presence of hydrologic, soil, and vegetative characteristics of the site (Environmental Laboratory 1987). DNREC defines subaqueous lands as submerged lands ("land lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the State, together with the beds...of navigable rivers, streams, lakes, bays, inlets, ponds, or other waterways within the boundaries of the State") and tidelands ("lands lying between the line of mean high water and the line of mean low water"; DNREC 1992). DNREC regulates any potential activities within subaqueous lands. The conceptual site plan for the Indian River IGCC does not impact any wetlands or subaqueous lands within the site.

Previous investigations of the site indicated no wetlands are located there (Golder 2003). There is one depressional area on the site that leads into an ephemeral channel, north of the project area that was deemed not a jurisdictional resource.

Other characteristics supporting the conclusion that wetlands are not present include soil and vegetation indicators. Soil is characterized as Evesboro loamy sand, which is not a hydric soil. This soil type has rapid rainfall infiltration and has too high a chroma just below the A horizon to qualify as hydric (Golder 2003). In addition, species that do not require wetland conditions dominate the vegetation community, further supporting the absence of wetlands on the site. NRG's environmental consultants, Ecology & Environment, performed a site visit during October of 2006, which confirmed the observations referenced above. The USACE and DNREC will be consulted in the normal course of permitting regarding this determination. If the agencies determine that this area is jurisdictional wetlands, NRG owns ample property in the watershed to mitigate the minor impacts that the project would fill.

Terrestrial Environment

The vast majority of the site is comprised of a typical eastern pine and hardwood forest located in the coastal plain region. The eastern and central portions of the site area are dominated by a forest community with the following dominant tree species: loblolly pine, Virginia pine, red maple, sweet pignut hickory, persimmon, American holly, black cherry, and white oak. The site was partially logged in 1976, with only select trees being removed and unharvested trees left throughout the site (Golder 2003). A wildlife survey conducted prior to the harvest revealed the following species: American woodcock, red-eyed vireo, tufted titmouse, blue jay, northern cardinal, several species of owls, five-lined skink, southern flying squirrel, and white-tailed deer.

The eastern western portion of the site is comprised of a former fly ash disposal pit. Currently a gravel sorting company leases a portion of the property and the remaining section is covered by patches of various grasses and early successional vegetation species. On the southern end, an ash spoil reclamation test plot is located which is comprised of a small vegetated berm. This area contains very little terrestrial habitat besides an open, partially vegetated successional area.

With the presence of the landfill, power plant, limited residential, agricultural lands, and forested lands surrounding the site, minimal impacts to the terrestrial environment are expected as a result of clearing of the necessary site for the IGCC. Any species that are displaced from the area are expected to thrive in the similar habitats surrounding the landfill and power plant.

Aquatic Environment

As discussed in above, there are no wetlands or other aquatic habitats located on the site. To the north of the site are Island Creek and Indian River, and some associated fringing tidal wetlands on both sides of the creek. Island Creek appears to receive the bulk of its flow from the existing plant's discharge canal. Habitat is characterized by shallow waters with a sand/silt bottom. Both of the shorelines are primarily surrounded by fringing wetlands dominated by herbaceous vegetation. Island Creek flows for approximately two miles before connecting with the Indian River. The Indian River is a tidal river with a relatively undeveloped shoreline and a navigation channel that is occasionally dredged, located in the center of the channel.

Biological information regarding the site is provided by the 316 (a) and 316(b) studies conducted for the existing intakes at the Indian River plant. In the first year of the 316 (b) studies, the following species dominated the entrainment samples: bay anchovy (71%), Atlantic croaker (2%), winter flounder (1%), Atlantic menhaden (< 1%), and spot (< 0.1%). The impingement samples were dominated by the following species: Atlantic menhaden (74%), blue crab (19%), Atlantic croaker (2%), and bay anchovy (2%).

Only one of these species, winter flounder, has federally designated Essential Fish Habitat ("EFH") in the Indian River (NOAA Fisheries 2006). All life stages of this species (eggs, larvae, juveniles, and adults) are included in this listing and it is expected that an EFH assessment will be

conducted in the normal course of permitting. Based on the source of the cooling water intake in the existing discharge canal, no adverse impacts to this species or its habitat are expected.

Threatened and Endangered Species Protection

Previous consultations with DNREC for the Phase 1 landfill area revealed no threatened or endangered species inhabiting the site (Golder 2003). In addition, no threatened or endangered species or protected lands were identified for the Indian River or Indian River channel in the evaluation of proposed dredging projects in Delaware's Inland Bays report (DNREC 2002). Based on the similarities of habitat between the project area and the Phase 1 landfill area, and the lack of threatened and endangered species identified in the DNREC report, no threatened or endangered species are expected to be present in the project area.

Based on review of the DNREC Natural Heritage program endangered plant list and the USDA plant database, there are two Federally listed plants that occur in Sussex County, Delaware, and have potentially suitable habitat in the project area (USDA 2006). These include: swamp pink, and Canby's cowbane. However, both of these species are primarily found in wetland habitats, which are absent from the site. Therefore, it is doubtful that any populations of these species exist.

Delaware Coastal Zone

The Federal Coastal Zone Act of 1972 mandates a review of the Indian River IGCC Project's consistency with the Delaware Coastal Zone Management Program ("DCZMP"). Delaware Section 7002 of the Delaware Coastal Zone Act includes the Site as part of the Coastal Zone. The Act prohibits new heavy industrial development in the coastal zone at sites that were not already in use by 1971. The site predates this exclusion, but a review for conformance with the Act will be required for the proposed expansion. The Delaware Coastal Zone Act is incorporated into the Delaware Coastal Management Program Policy Document. Industrial development activities within the Coastal Zone Strip, such as the proposed expansion at the Indian River site, require a permit from DNREC. The Act does allow the expansion of current operations on contiguous property. Historically permits and approvals have been issued at the Conectiv Edgemoor site for combined cycle projects, the Delaware City Refinery project, and Indian River's Unit 4. As described in Section 4.1.1 Permitting and Regulatory Approval Plan and Requirements, DNREC is expected to be the lead agency for the Environmental Impact Statement ("EIS") required under the Coastal Zone Rules.

Agricultural Areas

The area around the site is primarily agricultural. This is shown clearly in Figure 7-2 in Section 7.2. In the 1.5 mile radius around the site, 29% of the land is used for agricultural purposes. Most of the 1,148 acres that are owned by NRG are leased agricultural land, however, the area proposed for location of the IGCC is zoned HI-1 Heavy Industrial. [REDACTED] land will be used for the Indian River IGCC Project under the current conceptual site plan - none that is agricultural.

Corridors

Utility corridors planned for the Indian River IGCC Project to connect fuel sources and the electric transmission grids are minimal. All existing coal and fuel oil delivery infrastructure into the site will be used for the proposed IGCC.

The electric transmission lines from the existing Indian River plant can accommodate the additional generating capacity to the Delmarva power grid. There will be a new line from the IGCC facility to the existing 230 KV switchyard. This line will be entirely on NRG property. The

existing 138 KV line crossing the proposed IGCC site will need to be relocated by Delmarva Power. This line will be relocated to the west of the IGCC site, along the east side of Power Plant Road. This relocation would also be entirely on NRG property. Discussions are underway with Delmarva to renegotiate the power line right-of-way.

Additionally, there may also be a pipeline for the use of reclaimed water from the town of Millsboro. The preferred alternative for process water is to make use of reclaimed wastewater from the Millsboro water pollution control plant (WPCP). If this source can be developed, the reclaimed water line would be oriented from the Millsboro WPCP along Iron Branch Road to the railroad spur that enters the Indian River site. The water line would turn left and follow the railroad right-of-way, which is owned by NRG, until the new loop railroad track and then to the IGCC site.

Delaware Scenic Byways

The closest designated scenic drive to the proposed Project Site is US 1 from Dewey Beach, Delaware to Ocean City, Maryland. The closest point of the scenic drive to the Project site is over nine miles away and the site would not be visible from this area or obstruct any scenic view. A State bike path is designated along Dagsboro Road, about two miles southwest of the site.

5.4 Permitting

Permitting and Regulatory Approval Plan and Requirements

The Indian River IGCC Project is an expansion of the existing operations at the Indian River Generating Station. Since the Indian River Plant site is located within the Delaware Coastal Zone, the proposed Project will require the procurement of a Delaware Coast Zone Act Permit in accordance with the Delaware Coastal Zone Act (7 Del. Code, Chapter 70). The application for the Coastal Zone Act Permit requires the preparation of an Environmental Impact Statement (EIS) which addresses all potential impacts from the Project. The Delaware Department of Natural Resources and Environmental Control (DNREC) will be the lead agency for this process.

All the major environmental permits and approvals required for construction and operation of the proposed Project are identified below in Table 5-14. The preparation and submission of all required individual permit applications would occur concurrently with the Coastal Zone Permit process. NRG's intention is that the environmental analyses and applications submitted in support of the Indian River IGCC Project will be designed to be responsive to each agency's expectations for completeness and depth of analysis.

NRG's commitment to environmental excellence and the development of the Indian River IGCC Project are consistent with the goal of the Coastal Zone Act which is to protect the natural environment of the State's bay and coastal areas. The proposed IGCC design is based on avoiding impacts where feasible, and incorporates numerous controls and practices to mitigate impacts from construction and operation. The proposed mitigation strategies are discussed further in Section 5.3.

The project will be CO₂ capture ready, thus addressing the most critical environmental issue facing the power generation industry, and perhaps society, in the decision-making on the future of electricity production and large capital investments for a carbon-constrained world. In preparing analysis of potential environmental impacts and proposed mitigation for the Indian River IGCC Project, NRG has clearly included environmental factors within the project design.

A majority of potentially significant impacts have been avoided by proposing the IGCC at an existing and developed industrial site. In addition to avoiding new land disturbances, the existing site offers the opportunity to maximize the environmental benefits associated with the proposed

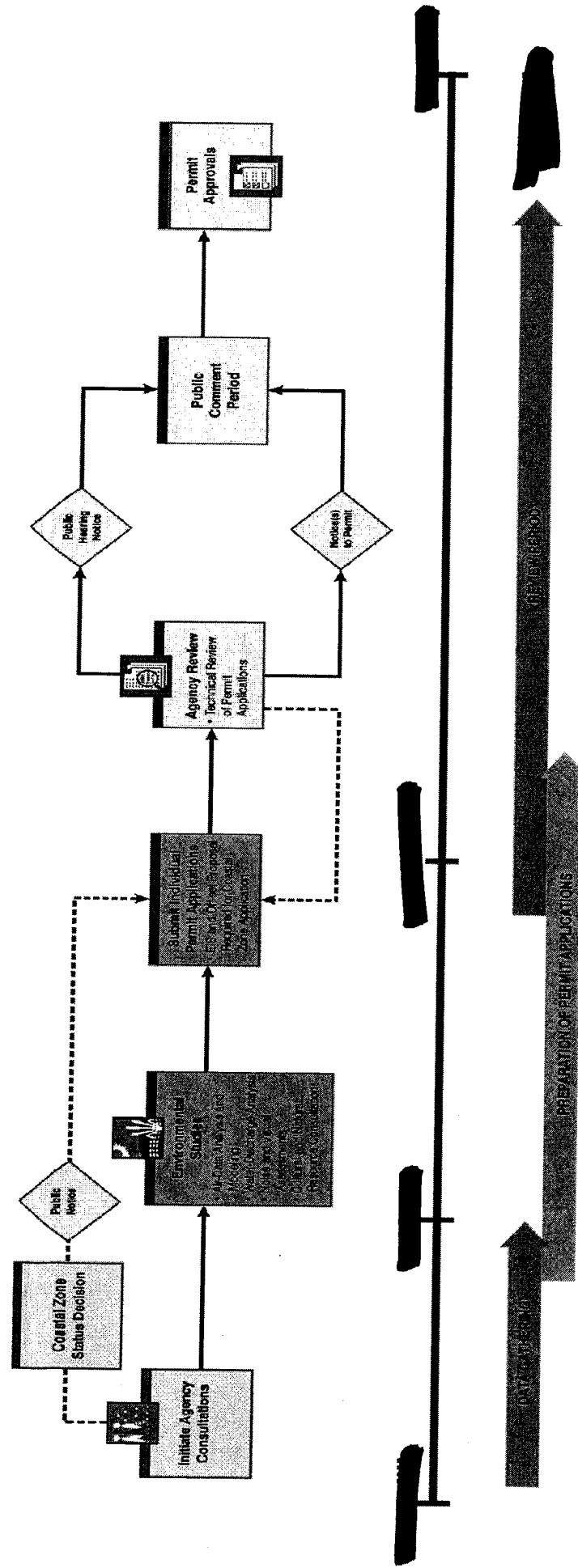
IGCC by using existing infrastructure and plant equipment. Many existing permits can be modified and new applications are not necessary. The existing permits for the site, and those that can be used for the IGCC, are discussed below.

NRG is committed to the communities in which it operates and has already initiated extensive dialogue with the communities in the vicinity of the Indian River IGCC Project. Community outreach to date and NRG's ongoing program is discussed in Section 1.

Table 5-14 Major Federal and State Permits Required for the Indian River IGCC Project

Permit or Approval	Reference	Agency	Regulated Activity	
Acid Rain Permit	40 CFR 72.30 40 CFR 72.31	USEPA	Affected units (electrical power generating units).	
Prevention of Significant Deterioration (PSD)	Regulation No.25 and 34	DNREC	Significant releases of attainment pollutants from new or modified major sources prior to construction	
Construction, Installation, Alteration and Operation Air Permit	Regulation No. 2 (7 Del. C. Chapter 60)	DNREC	Construction, installation, alteration or initiating operations of any equipment or facility or air containment control device that emits or prevents emission of an air contaminant.	
Title V - State Operating Permit	Regulation No. 30 (7 Del. C. Chapter 60)	DNREC	Operation of air pollution sources above thresholds specified in the regulation.	
Army Corps of Engineers (USACE) Construction Permit –	33 CFR 320 to 330 (Section 404 of CWA and Section 10 of Rivers and Harbors Act)	USACE	Construction activities in lakes, streams, and wetlands	
Notice of Proposed Construction or Alteration	14 CFR 77	FAA	Construction of structures over 200 feet.	
Coastal Zone Permit	7 Del. C. Chapter 70	DNREC	Construction activity within the coastal zone.	
Federal Coastal Consistency Certification		DNREC	Consistency with Delaware Coastal Management Program	
Solid Waste Permit	7 Del. C. Chapter 64	DNREC	Storage, collection, processing, transfer or disposal of solid waste.	
Cultural Resource Consultation			Impact on historical structures and archaeological sites	
Federal Endangered Species Consultation	Section 106 of National Historic Preservation Act	US Fish and Wildlife Service	Construction activity with potential to effect federally listed T&E species or critical habitat.	
Industrial Water Allocation	Section 10 of the Endangered Species Act	DNREC	Withdrawal and use of water from wells	
NPDES Surface Water Discharge Permit	7 Del. C. Chapter 6010f Regulations Governing Control of Water Pollution (RGCWP)Section 6	DNREC	Discharge of wastewater associated with industrial activity	
NPDES Industrial Storm Water Discharge Permit	RGCWP Section 9	DNREC	Storm water runoff due to industrial land use	
NPDES Storm Water Permit for Construction Activity	RGCWP Section 9	DNREC	Storm water discharges from the construction process	
Subaqueous Land / Wetlands Permit	7 Del. C. § 7212	DNREC	Certain activities upon privately-owned or publicly owned subaqueous lands.	
Aboveground Storage Tank	7 Del. C. Chapter 74A	DNREC	ASTs greater than 12, 499 gallons containing regulated substance other than heating fuel, diesel, or kerosene	

Figure 5-7 Permitting Schedule



Current Permitting Activities

As discussed above, the permitting strategy for the Indian River IGCC Project takes advantage of using existing infrastructure and its associated permits. The status of the current permits for the existing units at the Indian River Generating Station is summarized below in Table 5-15.

In order to keep the development schedule, NRG has already initiated environmental assessment work that is likely to be required in the scope of an Environmental Impact Statement ("EIS"). An agency meeting with DNREC to introduce the Indian River IGCC Project and to discuss the permitting strategy was held on October 5, 2006. Additional pre-application meetings for the new permits and the modifications of the existing permits will be scheduled with the appropriate agencies as soon as possible. Recent permitting efforts, which are reflected in the analyses of potential impacts and proposed mitigation, include:

- Review of all existing permits;
- Preliminary feasibility, technology analyses, and data gathering for air quality impacts;
- Site investigations and historical research for biological impacts;
- Review of potential cultural resources;
- Collection of visual impact baseline data;
- Environmental justice screen;
- Feasibility study of carbon sequestration pipeline spur routes and well field locations to develop a permit list for this action; and
- Meetings with government and non-government leaders and press releases.

No environmental permit applications have been filed with the agencies at this time; however, NRG is currently in process of completing the work that will underpin permit applications for the Indian River IGCC Project. DNREC has initiated permitting from within the Air Quality Management Branch and has streamlined many permit application process steps. Further, DNREC has assigned permit leads and required resources for various media applications.

Permitting Certainty

The permitting history of recent, large coal-fired power plants throughout the US highlights that supercritical and subcritical pulverized coal power plants and circulating fluidized bed power plants face significantly greater likelihood of protracted permitting risk including outright denials, schedule delays, and appeals. Table 5-16 summarizes the permitting history for most of the large, coal-fired power plants filing PSD permit applications in the US since 2003. Over three-quarters of these projects have had their permits appealed. The motivation for the appeals is generally an objection to coal-fired power plants with their perceived unacceptable emissions profiles and the lack of an ability to efficiently capture CO₂. Within the air permit regulatory process, this objection most commonly materializes as the failure of the relevant agencies to require IGCC as Best Available Control Technology ("BACT"). The average time to receive a PSD (air) permit when it has been appealed is currently at 32 months; however, not all of the projects under development have final permits yet, so this average time will likely increase. By contrast, no IGCC project to date has faced a denial or appeal of its PSD permit.



Table 5-15 Principal Environmental Permits, Licenses and Approvals for the Existing Indian River Generating Station

Type of Permit/License/Approval	Number	Agency	Status	
AIR				
Title V Permit	AQM-005/00001	DNREC	Valid	
Used Oil (Landfill Garage) Furnace Construction/Operation Permit	APC 95/519	DNREC	Valid	
Unit 1 Operating Permit	APC-81/906	DNREC	Valid	
Unit 2 Operating Permit	APC-81/905	DNREC	Valid	
Unit 3 Operating Permit	APC-81/660	DNREC	Valid	
Unit 4 Operating Permit	APC-82/149	DNREC	Valid	
Unit 10 Operating Permit	APC-93/0461	DNREC	Valid	
Phase II Acid Rain Permit for boiler units 1-4	AQM 005/00001-IV	DNREC	Valid	
Facility Permit Vacuum Transfer Silo	APC - 2003/0764-Construction	DNREC	Valid	
WATER				
Industrial Water Allocation Permit (Groundwater Wells 4A, 4B, E)	95-0006AM	DNREC	Valid	
Industrial Water Allocation Permit (Groundwater Well C)	95-0006BM	DNREC	Valid	
Industrial Water Allocation Permit (cooling water intake)	87-0013	DNREC	Valid	
NPDES permit	DE0050580 88 WPCC 3013B/76	DNREC	Valid/Renewal Status	
WASTE				
Solid Waste Facility Permit (Fly Ash Facility)	SW-96/04	DNREC	Valid/Renewal Status	
EPA Hazardous Waste Generator ID Number	DED000621888	USEPA	Valid	
TANKS				
Registration for UST No. 1-4	5-000371	DNREC		
Facilities Permit (for 3 ASTs)	WPCC-3194/75	DNREC		

Table 5-16 Permitting History of Recent Pulverized Coal and Fluidized Bed Power Plants in the US
(Greater than 500 MW and PSD Permits Issued Since 2003)

Project	Type	MW	Appeal	Basis for Appeal
Comanche Unit 3, CO	SCPC	750	Yes	Sierra Club and other groups filed administrative appeals with the State utilities commission. Settlement required substantial emission reductions at the new unit and at existing units, including mercury reductions, and to fund supplemental environmental projects.
Elm Road, WI	SCPC	1300	Yes	S. C. Johnson & Sons and Clean Wisconsin filed a State administrative appeal. Appeal issues included evaluating whether IGCC is BACT, lower mercury limits, and other matters.
	IGCC	1000	No	
Weston Unit 4, WI	SCPC	500	Yes	Sierra Club filed a State administrative appeal. Appeal issues included miscellaneous BACT issues and enforceability.
Indeck-Elwood, IL	FBC	660	Yes	American Lung Association, Sierra Club and other groups appealed to USEPA Environmental Appeals Board. Appeal issues included miscellaneous BACT matters, excluding startup, shutdown and malfunctions; ESA consultation, and enforceability.
Prairie State, IL	SCPC	1500	Yes	Sierra Club and other groups appealed to USEPA Environmental Appeals Board. EAB remanded the permit for procedural shortcomings. Appeal issues included alternatives analysis, need, IGCC as BACT, dry-cooling, clean fuels, other miscellaneous BACT issues, ESA consultation, and enforceability.
Council Bluffs, IO	SCPC	750	No	
Longview, WV	SCPC	600	Yes	Sierra Club and other groups appealed. Settlement required lower allowable emissions and performance of additional emissions monitoring. Local environmental groups, not a party to the settlement, recently filed suit in State Supreme Court seeking to overturn the State Public Service Commission's siting decision.
Plum Point, AR	SubPC	800	No	
Big Cajun II, LA	SCPC	575	No	
Trimble County, KY	SCPC	750	Yes	Sierra Club and other groups are pursuing both a State administrative appeal and a petition to EPA to object to the Title V permit. Appeal issues included IGCC as BACT, clean fuels, mercury, other miscellaneous BACT matters, netting, modeling, and enforceability.
Thoroughbred, KY	SubPC	1500	Yes	Sierra Club and other groups filed a State administrative appeal. Appeal issues included IGCC as BACT, clean fuels, other miscellaneous BACT matters, modeling, and enforceability.

Building and Construction Permits

The Indian River IGCC Project site is entirely within an unincorporated portion of Sussex County within Council District 4. Sussex County regulates the construction activities under § 52-21 of the County Code, which requires an application for a Building Permit to be approved by the County Building Official prior to any construction or demolition. Prior to construction of the Indian River IGCC Project, a building permit will need to be obtained from Sussex County. The permit application requires that civil and structural design elements, along with electrical and fire protection measures, are addressed pursuant to applicable building codes.

FERC Filings

NRG anticipates two FERC filings will be prerequisites to operation of the Indian River IGCC Project. Although these regulatory approvals are not necessary until the facility is ready to commence testing, NRG plans to file for these approvals no less than ninety (90) days prior to financial close. Specifically, NRG intends to obtain:

- Exempt Wholesale Generator status in accordance with the Public Utility Holding Company Act of 2005, and regulations promulgated thereunder, for Indian River IGCC, LLC, as an entity that will own or control generation; and
- Market-based rate authority for the project entity.

NRG and its affiliates currently have market-based rate authority. [REDACTED]

6 Carbon Capture and Sequestration

6.1 NRG's Overall Plan for Carbon Management

A new power plant represents an enormous capital commitment for an asset that will have a life of 30 or more years. NRG strongly believes that the Electric Utility Retail Customer Supply Act, together with DPL's RFP, provides a critical opportunity to incent the commercial implementation of an advanced technology like IGCC that is not only "ready for prime time", but has the ability to meaningfully address critical carbon issues during the life of its operations.

We believe that NRG is best-placed to bring realization of Delaware's farsighted plans for innovative baseload technology, together with its economic and environmental policy objectives, to fruition through implementation of our Indian River IGCC Project. A key aspect of our qualification reflects NRG's overall plan for carbon management in its business. While greenhouse issues are a relatively new force in US commerce, NRG has been – and continues to be – proactive in this area. We have developed a five-point strategy to aggressively address NRG's carbon profile. The "*Repowering America with NRG*" initiative announced in June 2006, and which NRG is actively implementing, would reduce NRG's carbon dioxide (CO₂) emissions per megawatt-hour by 22%, while increasing baseload generating capacity by 42%. NRG's Carbon Responsibility Program is detailed in Appendix 6.

NRG is well-credentialed in the field of carbon management – particularly among power generators. For over two years we have been both an active advocate on carbon responsibility issues and taking tangible steps towards reducing the carbon footprint of our business. These efforts fall squarely within NRG's *econrg* initiative – the Company's ongoing and extensive environmental efforts to enhance its environmental stewardship and reduce the impact of its business on the environment, for the benefit of all our communities.

Highlights of our activities with respect to carbon mitigation and management include NRG's:

- Membership of the *Gulf Coast Carbon Center* ("GCCC") – a public-private partnership between the University of Texas, Bureau of Economic Geology and industry sponsors NRG, Marathon Oil, Kinder Morgan, Schlumberger, BP, Praxair, Entergy and Chevron. The GCCC's mission is to establish and promote the development of technologies to permanently and safely sequester carbon, on an expedited time frame, including through commercial applications like enhanced oil recovery ("EOR"). The GCCC is involved in a number of field projects, notably the Frio Brine Injection Project in Texas, where – during the Fall of 2004 – 1,600 tons of CO₂ were injected 1,500 meters below the surface into a high-permeability brine-bearing sandstone that is being monitored to track how well that CO₂ stays in place. Results to date have been extremely positive;
- Acquisition of premier wind development company, *Padoma Wind Power, LLC* in July 2006. Non-emitting wind generation projects are currently under development by the Padoma team in NRG's core regions, including California, Texas and the Northeast;
- Participation with GreenFuels Technologies Corporation ("GreenFuels") and the New York State Energy Research and Development Authority ("NYSERDA") in the field study of *algal bioreactor technology* at our Dunkirk facility in Upstate New York, trialing the removal of CO₂ from the flue gas of coal-fired plants. GreenFuels' technology harnesses photosynthesis in algae to consume waste gases and heat from the air emissions stream from power plants and produce high energy biomass. A number of industrial processes utilize algae as a raw material: biodiesel can be produced from the oils in the algae; fermentation of the algal biomass generates products ranging from bioethanol to bioplastics; and dried algae burned in gasification applications or co-fired with coal can be used to generate power, substituting for other solid fuels;

- Ownership of nuclear reactors at its South Texas Project ("STP"). *Nuclear power generation* has an extremely low emissions profile and NRG has announced development of two new units at STP (2,700 MW) as part of its domestic repowering plans; and
- Membership of *The Global Roundtable on Climate Change* ("GROCC"), established through the Earth Institute at Columbia University. GROCC brings together, by invitation, more than 150 high-level, critical stakeholders from all regions of the world to discuss and explore core scientific, technological, and economic issues critical to shaping sound public policies on climate change.

Carbon management in the context of the Indian River IGCC Project consists of two main aspects: capture and permanent sequestration. Sequestration can be further broken down into CO₂ injection and transport. In this Section 6, we detail NRG's proposals with respect to each of these areas.

6.2 CO₂ Capture at the Indian River IGCC Project [REDACTED]

The Indian River IGCC Project will be carbon capture ready from its first day of operation.

Capturing CO₂ in gasification plants is a common and well-understood process. The design of IGCC plants allows greater efficiency in carbon capture compared with other coal plants³. Essentially, in an IGCC plant: (a) there is a higher concentration of CO₂ in a smaller volume than in other coal plants, radically enhancing removal efficiencies; (b) the required absorber/stripper solvent recirculation system is already installed as part of the gas cleanup system; and (c) capital and incremental capture costs (including corresponding compression costs) are significantly reduced because the CO₂ is already present at high pressures in the gasification process (e.g., 450 to 1,000 psi).

While specific regulations limiting CO₂ emissions are not currently in effect in Delaware, NRG believes that carbon constraints will be effective through much of the life of the Indian River IGCC Project, either pursuant to the Regional Greenhouse Gas Initiative ("RGGI") or successor provisions at the Federal or State level. As such, NRG has considered a number of approaches to CO₂ capture from the Indian River IGCC Project.

The Indian River IGCC Project CO₂ capture consists of effectively converting CO to H₂ (i.e., CO + H₂O → CO₂ + H₂) by the water gas shift reaction followed by separation of the CO₂ from the syngas by absorption in solvent. Regeneration of the solvent produces a CO₂ stream suitable for enhanced oil recovery or other underground sequestration. The CO₂ stream must be compressed from a low pressure (16 to 72 psia) to a high pressure (2,000+ psia) suitable for pipeline transport and injection underground.

While analyzing CO₂ capture, two alternatives were considered:

- Installing capture equipment during initial design; and
- Future addition of capture equipment – based on a plant that has been designed and configured from inception to most efficiently permit the addition of capture equipment.

³ For non-IGCC coal plants 60% - 80% of the cost is capturing the CO₂. Post-combustion CO₂ technologies in non-IGCC coal plants use a recirculating solvent-based absorber and stripper configuration. The low pressures of exhaust gases require additional energy to pump large quantities of solvent around the CO₂ absorber system. The large compression ratio (80:1) between the low pressure non-IGCC coal plant exhaust gases to the high sequestration pressures results in substantial invested capital and high operating costs. The net effect is increased energy consumption reduced electricity production.

Acid Gas Removal Unit

The double-state Acid Gas Removal ("AGR") unit removes H₂S and CO₂ as separate product streams. Cool, dry, and particulate-free synthesis gas enters the first absorber unit. Loading the lean AGR solvent with CO₂ removes H₂S. Indirect application of thermal energy regenerates the rich solution in the bottom of the absorber. The stripper acid gas stream, is then routed to the Claus unit.

Sweet fuel gas flowing from the first absorber is cooled and routed to the second absorber unit, where it is contacted with “unloaded” lean solvent. The solvent removes approximately 97% of the CO₂ remaining in the fuel gas stream. CO₂ balance is maintained by hydraulically expanding the CO₂-saturated rich solution and then flashing CO₂ vapor off the liquid at reduced pressure. Sweet fuel gas off the second absorber is warmed and humidified in the fuel gas saturator, reheated and expanded, and then sent to the burner of the combustion turbine.

CO₂ Compression and Drying

CO₂ is flashed from the rich solution at multiple pressures. The lowest pressure CO₂ stream is “boosted” to 170 psi and then combined with another CO₂ stream at the same pressure. The combined flows are then compressed in a multiple-stage, inter-cooled compressor to supercritical conditions. During compression, the CO₂ stream is dehydrated with triethylene glycol. The virtually moisture-free supercritical CO₂ steam is then ready for pipeline transportation. Dehydrating the CO₂ will not be necessary if sequestration is accomplished using deep well injection.

[REDACTED]

[REDACTED]

_____ and any condensed sulfur formed as a result of the combustion of the fuel.

[REDACTED]
[REDACTED] 22-100-11 [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

~~_____~~

air gas from the [redacted] suggested sulfur species and [redacted] [redacted] sulfur
[redacted] and CO₂ as well as elemental [redacted]

6.5 Carbon Sequestration Feasibility

While many stakeholders – in Government, industry and elsewhere - are keenly and increasingly focused on reducing greenhouse gases (“GHGs”) in the atmosphere, the challenge of where to store those gases in a safe, permanent and economically and technically feasible way remains. The science of carbon sequestration is rapidly evolving – and the rate of that development is increasing. NRG has been active in this developing area for more than two years, as described at the beginning of this Section. While a number of issues remain regarding the optimal design and implementation of carbon sequestration facilities, NRG is positioned at the forefront of its industry to facilitate the identification and implementation of the necessary solutions and capitalize on those opportunities for the benefit of its customers and communities.

For the Indian River IGCC Project, there are several potential options for injecting and storing captured CO₂ in deep underground geologic formations very near the Indian River site, as well as a number of existing pipelines and pipeline right-of-way routes that could be utilized for constructing a CO₂ pipeline from the Indian River plant to other geologic storage sites. However, the proximate formations are the most promising for sequestration and offer the most technically and commercially feasible solution for the Indian River IGCC Project. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] b7C

[REDACTED]

[REDACTED] regarding the "declassification" [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] as well as possibly in other instances,

[REDACTED]

[illegible]

[REDACTED]

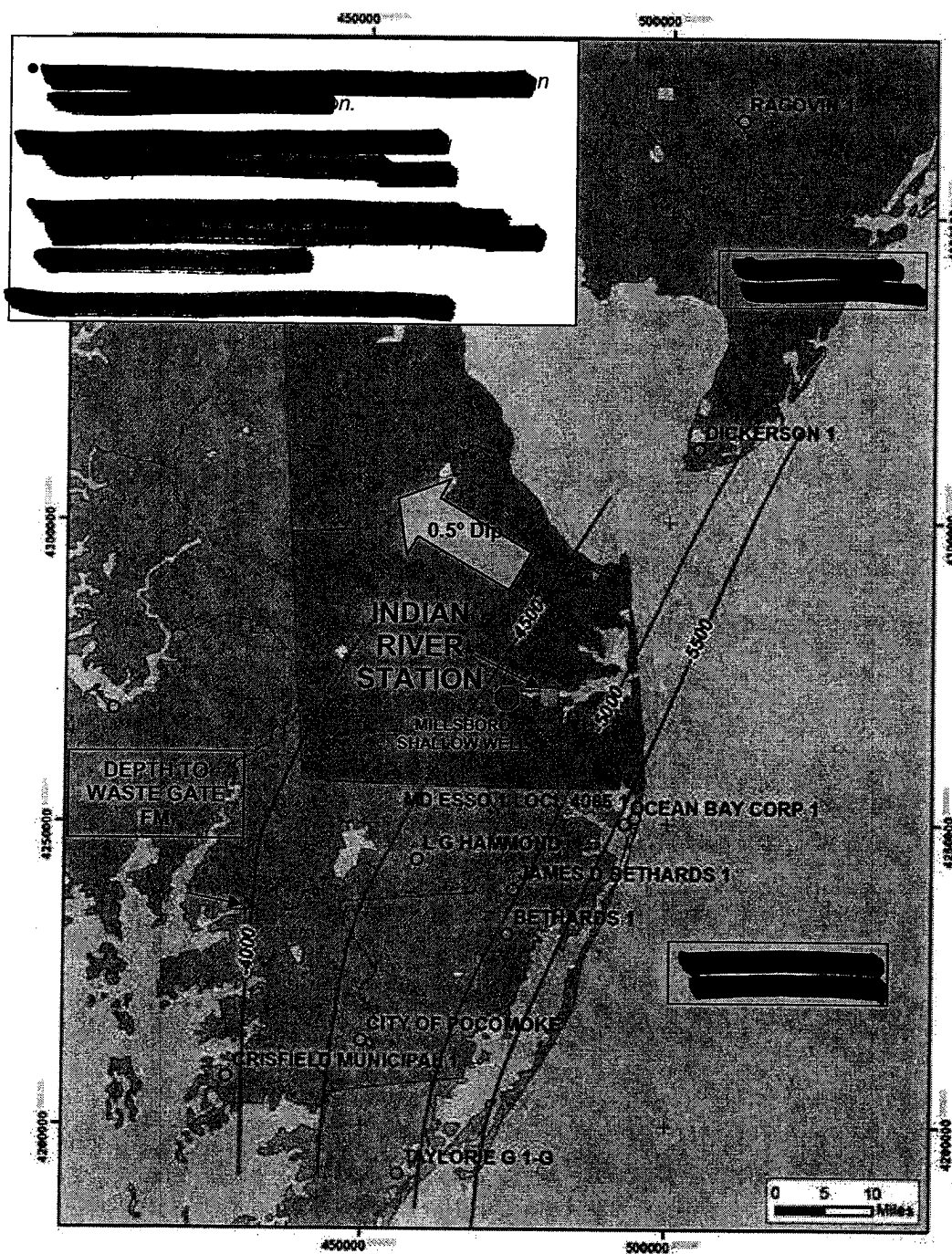
[REDACTED]

[REDACTED] from the March 1968 [REDACTED]

[REDACTED] at
[REDACTED]
[REDACTED] "Sad look in his eyes."

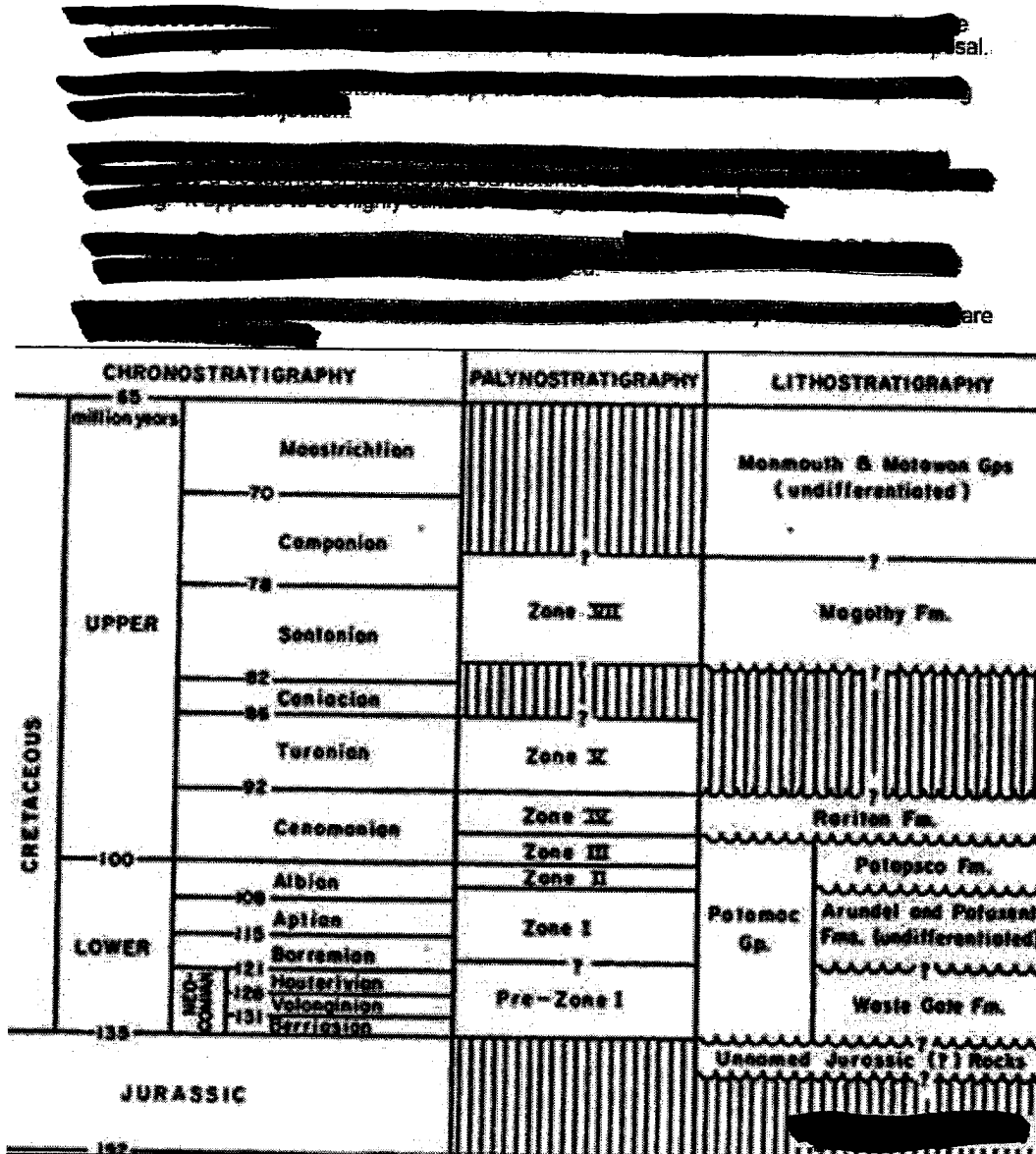
Survey of the training program, for the observation of 62, primarily with respect to expected performance and

Figure 6-1 Map Showing Depth to Top of Waste Gate Formation



Stratigraphy - The stratigraphic column in eastern Delaware comprises a thick sequence of Cretaceous-age clastic rocks, principally sandstones and shales, resting unconformably on poorly defined Jurassic and older basement (Figure 6-1). Initial analysis indicates that saline aquifer formations with CO₂ storage potential exist in the lower Cretaceous Potomac Group. The Waste Gate Formation at the base of the Potomac Group comprises a sequence of interbedded sandstones and shales deposited in a fluvial/deltaic setting approximately 120 to 130 million years ago.

Figure 6-2 Stratigraphy of Cretaceous Saline Aquifers in the Vicinity of the Indian River Station



The [REDACTED] has thick sandstones with good porosity and permeability, and this unit appears to be highly suitable for long-term CO₂ storage. Sandstones in the [REDACTED] overlying the [REDACTED] also may be CO₂ storage candidates, but are somewhat less developed. The [REDACTED] generally are too shallow to be CO₂ injection zones, since injected CO₂ would be in the free gas phase rather than supercritical, and thus would take up far more space in the reservoir. Furthermore, these zones can be freshwater sources as shown by a recent shallow test well near the town of Millsboro, Delaware.

Figure 6-3 and Figure 6-4 show detailed Cretaceous stratigraphy in the Bethards #1 well, which is located 25 miles south and along strike of the Indian River station and thus provides a fair analog to the likely stratigraphy at the CO₂ injection site. The upper portion of the sequence (Figure 6-3) includes freshwater aquifers that are not suitable for CO₂ storage. However, the lower Cretaceous at a depth of 5,000 feet to 7,000 feet [REDACTED] comprises a sequence of well-developed, interbedded sandstones and shale cap rocks.

Figure 6-3 Bethards Test Well Log (Upper) (Worcester County, MD)

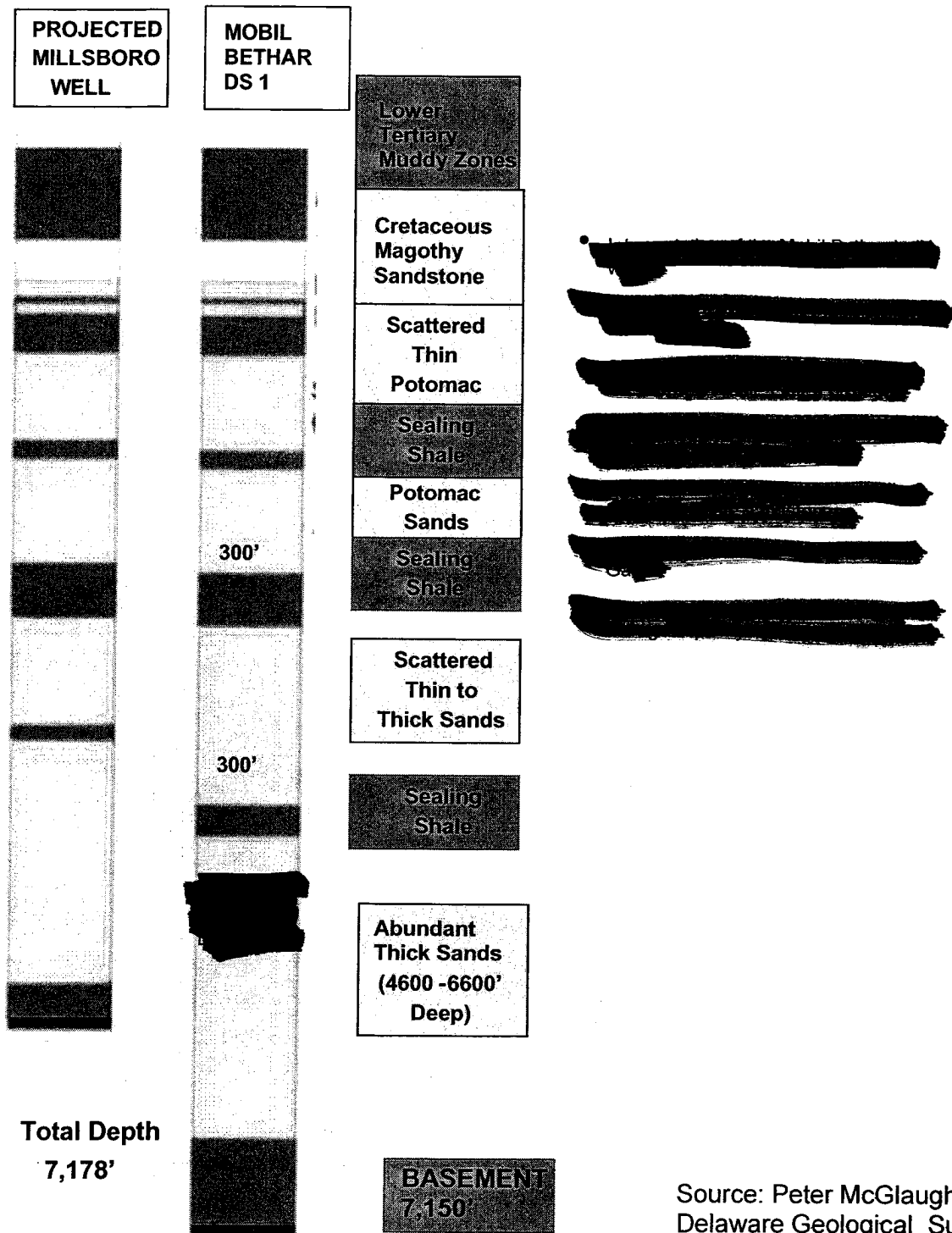


Figure 6-4 Bethards Test Well Log (Lower) (Worcester County, MD)



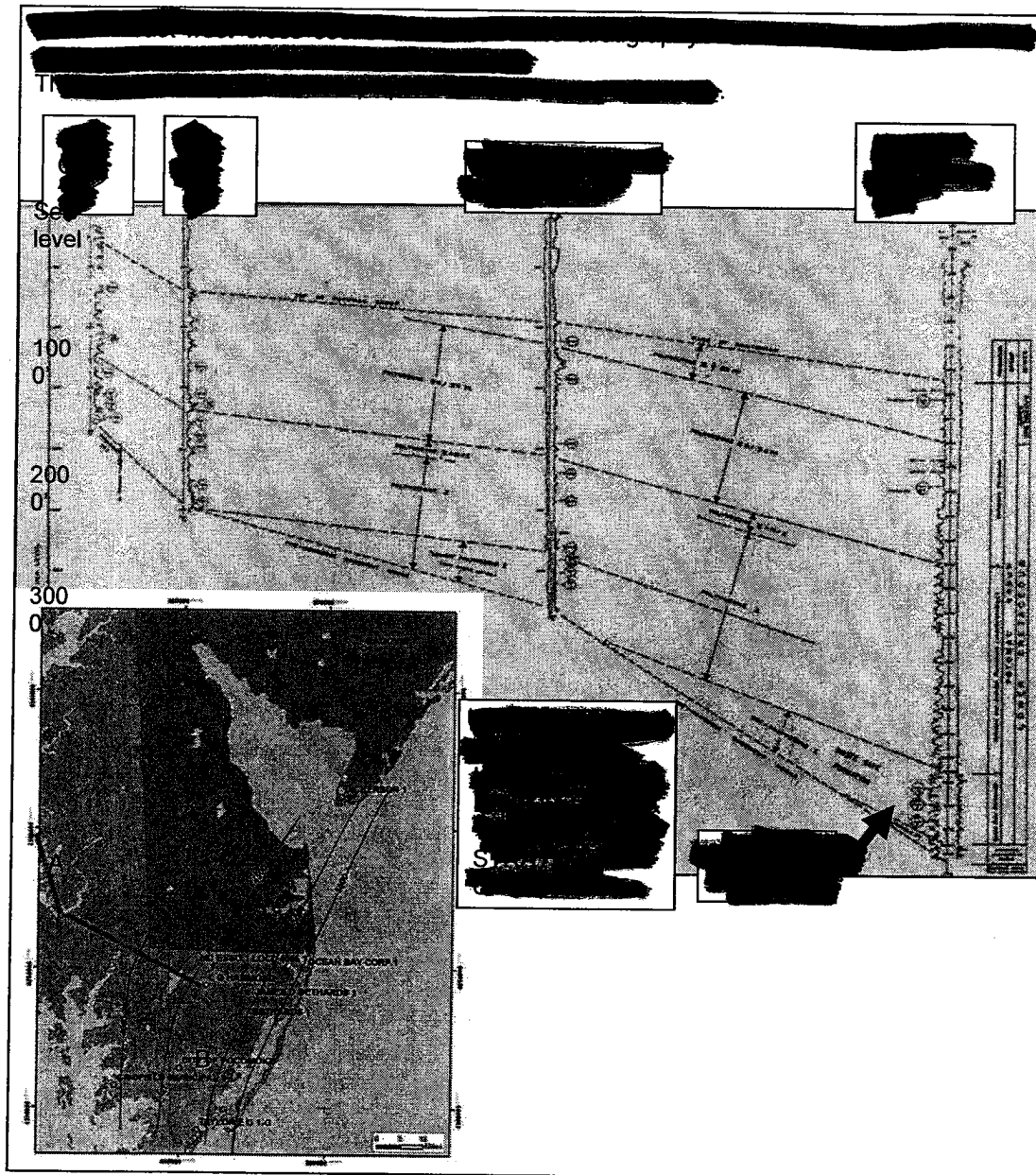
has single, thin (i.e., less than 20 foot) poor-quality sandstones deposited in a marginal marine environment. [REDACTED] contains multiple, thin (from less than 10 feet to 30 feet), fine- to medium-grained sandstones deposited in a marginal marine environment. Neither unit is as attractive as [REDACTED] for CO₂ storage.

Figure 6-5 Bethards Test Well Log (Interpretation) (Worcester County, MD)



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in its entirety.

Stratigraphic Pinchout A favorable geologic situation in the [REDACTED] appears to provide optimal conditions for potentially trapping CO₂ permanently at Indian River. Figure 6-7, Figure 6-8, and Figure 6-9 show that [REDACTED] thins gradually in a westward direction, from approximately 1,500 feet thick along Delaware's Atlantic coast, to about 900 feet thick at Indian River, to less than 100 feet thick west of Indian River. In fact, [REDACTED] disappears entirely and is not present in two deep wells along the eastern Chesapeake shore of Maryland. CO₂ injected into [REDACTED] at the Indian River station would gradually flow updip to the west, but probably would be trapped permanently because the unit pinches out against non-permeable basement and overlying shales.



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redacted in their entirety.

Modeling the Saline Aquifer CO₂ Plume. In the NRG study, we next projected the long-term dynamics of a CO₂ plume injected into [REDACTED] at the Indian River site. This analysis is an important first step and if the Indian River IGCC Project is selected to be developed pursuant to the RFP process, will be further refined using actual reservoir data collected from future test coreholes at the Indian River injection site. However, the modeling is useful for helping to locate and evaluate the preliminary injection site.

has conducted pioneering reservoir modeling in the area of saline aquifer storage of CO₂.ⁱ The results indicate that aquifers have much lower storage capacity than indicated by simple volumetric calculations, perhaps using only 10% of total pore space volume. However, given the extremely large volumes available to CO₂ storage in Delaware, we still expect that more than sufficient capacity exists for the Indian River station. These assumptions were built into NRG's modeling analysis of the Indian River site.

Simple volumetrics calculates that the Cretaceous saline aquifers are theoretically capable of storing 53 million tons CO₂ per square mile. However, modeling indicates that effective storage is only about 10% of the theoretical value. There are three mechanisms whereby CO₂ is stored within a saline aquifer: (a) in solution within the aquifer; (b) trapped as a gaseous phase; and (c) trapped as a free phase once CO₂ migrates updip to shallower, lower pressure regions.

[REDACTED]

[REDACTED]

[REDACTED] re-

[REDACTED]

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[REDACTED] d

[REDACTED]

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Table 6-3 Actual CO₂ Storage per Square Mile is only 11% of Simple Volumetrics

CO ₂ Storage Mechanisms	Billion ft ³ (Bcf/mi ³)	Million tons (Mmt/mi ³)
a) Simple volumetrics		
b) CO ₂ in solution		
c) Trapped Gas (Adsorbed CO ₂)		
d) Free CO ₂		
Total b, c, & d		
Fraction (b+c+d)/a		

Modeling the CO₂ Plume. In the NRG study, we used [REDACTED] proprietary reservoir simulator COMET-2 to model the growth and migration of a CO₂ plume injected into the Waste Gate Formation sandstones at the Indian River station. Table 6-4 summarizes the injection parameters used to model the plume, while Table 6-5 shows the reservoir assumptions. [REDACTED] made simple assumptions about the geometry and reservoir properties of the Waste Gate sandstones at Indian River, such as a uniform net sandstone thickness of [REDACTED].

Table 6-4 Injection Parameters Used to Model CO₂ Plume at Indian River

Sequestration Gas:	30-Yr CO ₂ Injector Volume (M ³)	30-Yr CO ₂ Inj. (Bs)
65% Capture 100% Injection	[REDACTED]	

Table 6-5 Reservoir Parameters Used to Model CO₂ Plume at Indian River

Parameter	Value
Sandstone Thickness (feet)	██████████
Porosity	██████████
Permeability (mD)	██████████
Structural Tilt	██████████

Figure 6-10 shows the simple one-layer model that was used for the NRG study, with [REDACTED] square grid blocks of uniform size. In reality, the interbedded sandstones and shales within the [REDACTED] would partition the CO₂ injection zones into multiple isolated layers. The model assumes that depth to [REDACTED] ranges from about [REDACTED] in the east to [REDACTED] in the west. It is further assumed that four horizontal wells in a square configuration are used for CO₂ injection.

Figure 6-10 Reservoir Simulation Model to Forecast CO₂ Injection at Indian River Station

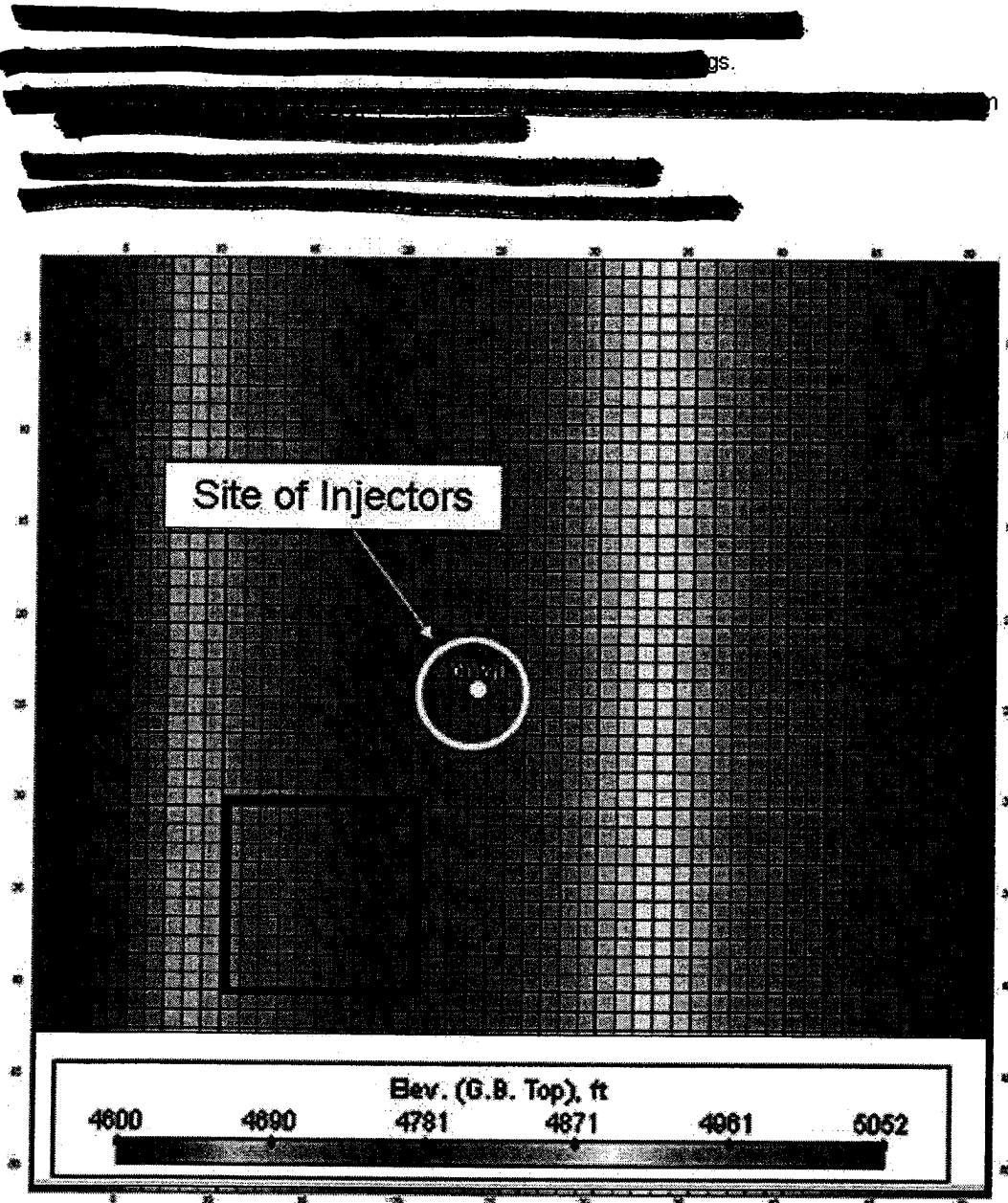
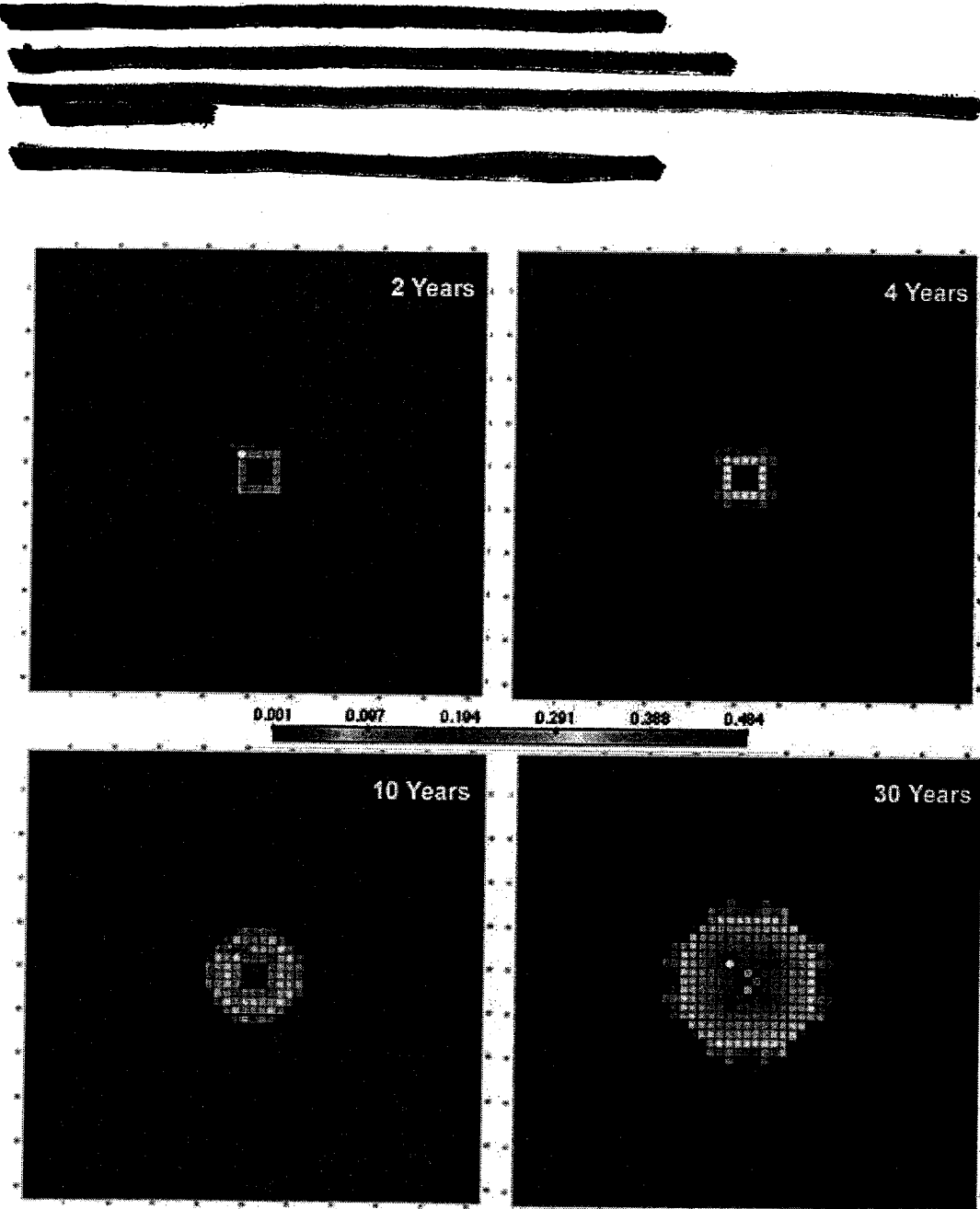


Figure 6-11 shows the sequential movement of CO₂ [REDACTED] during the 30-year injection phase, with color illustrating the degree of CO₂ saturation. [REDACTED]

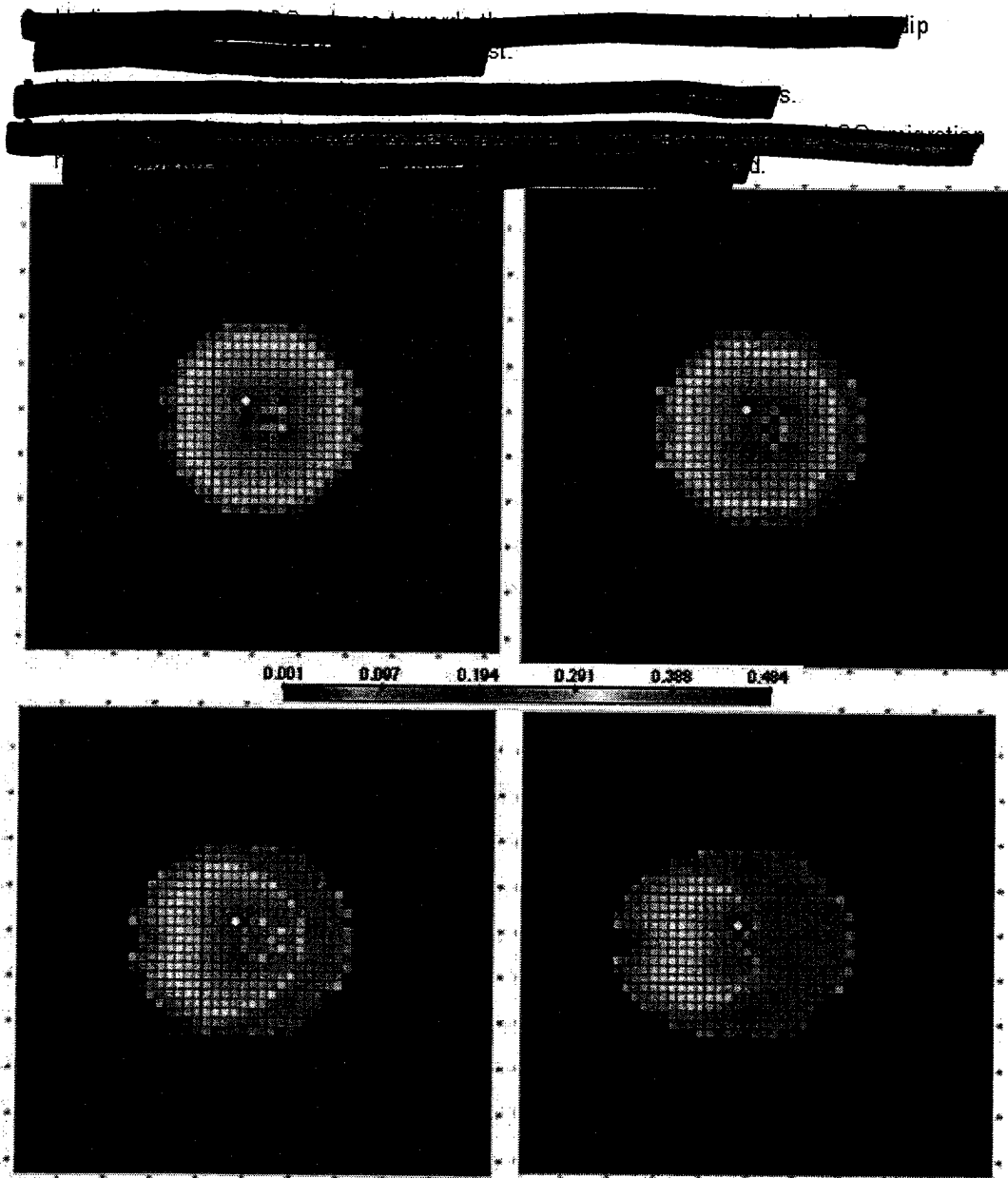
[REDACTED] grow gradually from year 2, 4, 10, and 30. The plume stays quite compact in size under the simple one-layer assumption; it may be larger if a multi-layer model is used, especially if some sandstones are assumed to be more permeable [REDACTED]

Figure 6-11 Reservoir Simulation Model Forecasting CO₂ Injection at Indian River Station



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in its entirety.

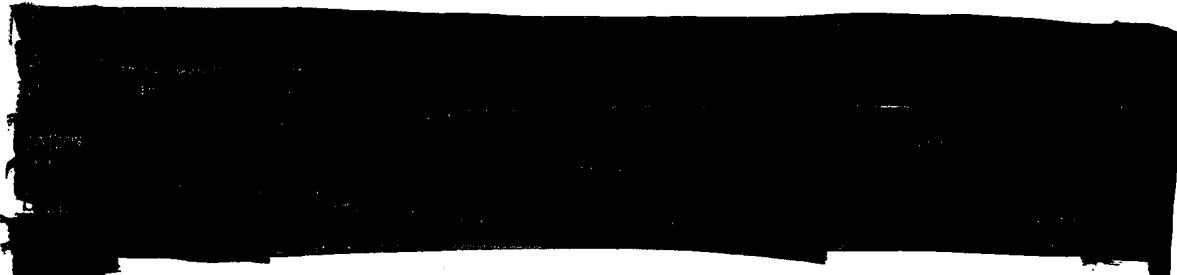
Figure 6-13 Long-Term Reservoir Simulation Model










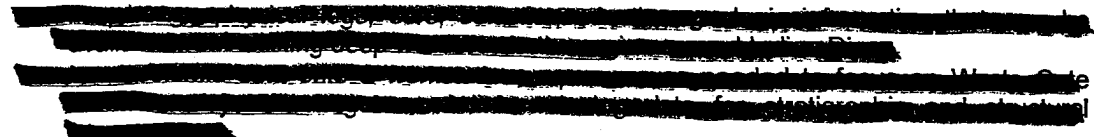


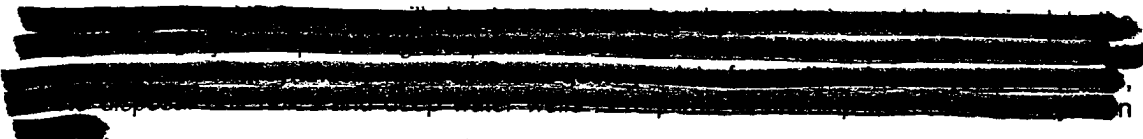


6.6 CO₂ Injection

Location of CO₂ Injection Wells for the Indian River IGCC Project

NRG anticipates drilling about four horizontal CO₂ injection wells, depending on reservoir characteristics. Each well will require approximately one acre of land to be cleared and fenced off. The short CO₂ pipeline will be run along existing NRG land to minimize the incremental impact on the environment and expedite permitting. Existing power line rights-of-way will be used to take the CO₂ from the plant to the vicinity of the injection.



There are many benefits to injecting close to Indian River. The shorter pipeline required reduces the risk of potential incidents involved in CO₂ transport, as well as capital and operating costs, and has regulatory support. Additionally, there are few shallow or deep well penetrations which could cause CO₂ leakage and the operations and management of injection can be easily synchronized with the Indian River IGCC Project.



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redacted in their entirety.

7 Site Development

7.1 Site Control

The existing Indian River project site is comprised of 1,148 acres, ultimately held by NRG Energy, Inc. through its wholly-owned subsidiaries. This site includes the existing Indian River steam plant, the ash landfill, the proposed area for the IGCC expansion, and several other contiguous parcels. Table 7-1 details the existing facility's acreage by land use. The proposed IGCC project will require [REDACTED] land located within Parcel C, [REDACTED]. The Indian River site plan is shown in Figure 7-1.

Table 7-1 NRG Indian River Property Use

Parcel	Use
A. Existing Steam Plant	Use to be continued
B. Burton Island east of existing Steam Plant fence line	Coal pile and vacant, use to be continued
B. Land Fill	Use to be continued for existing steam plant and IGCC waste not diverted for beneficial reuse
C. Scale House, Stone Terminal, Communications Tower, 138 KV Transmission line	To be relocated as part of IGCC Development
D. Other Lands Held by NRG	Vegetative buffer, tenant farmers, Delmarva Power, rail right-of-way, vacant.
TOTAL NRG Holdings	1,148.0

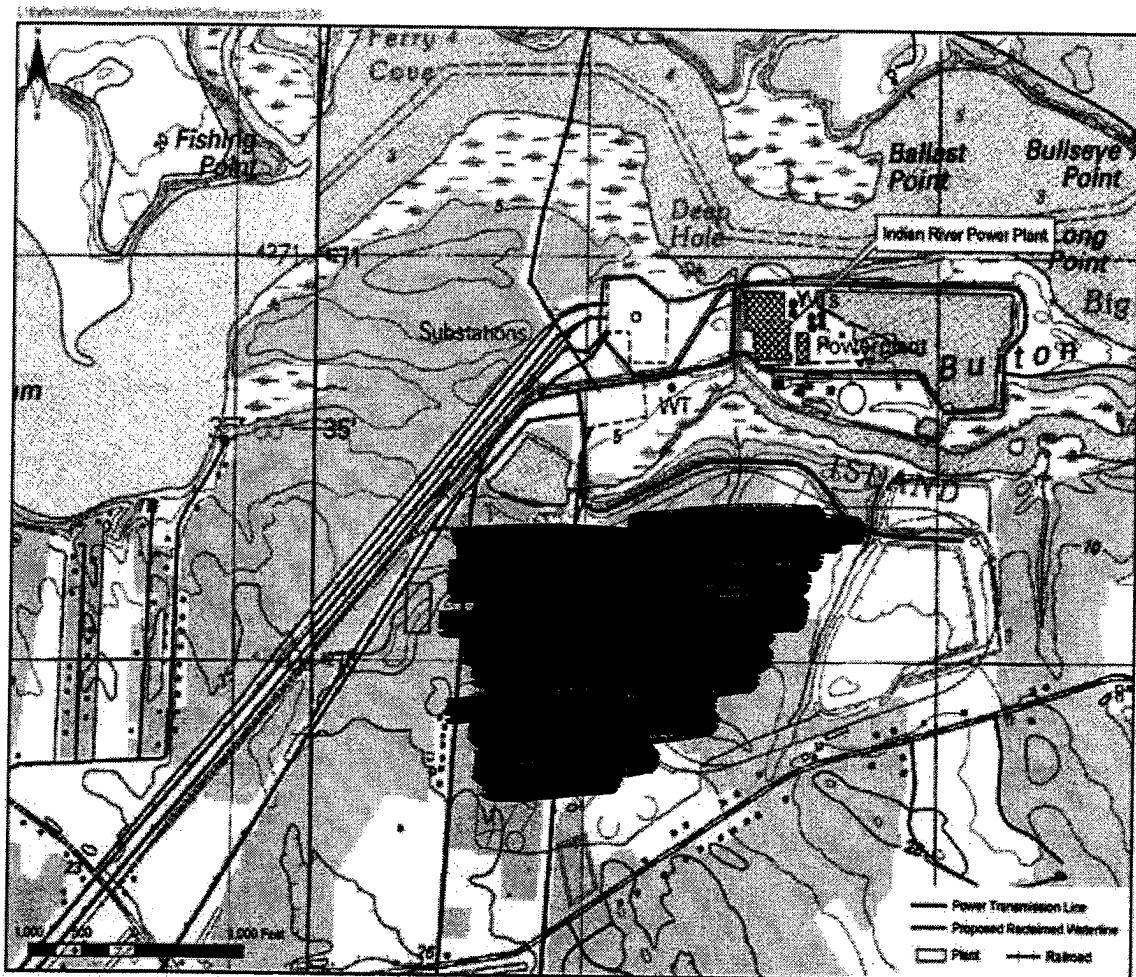
Except for the intense development at the existing Indian River steam plant and the landfill site, most of the NRG holdings at Indian River are vacant land or tenant-leased agricultural land.

The proposed IGCC site is mostly vacant, but there are some current uses. NRG has a scale house along the haul road to the landfill. This would have to be relocated as part of the development. Several leasehold agreements are also in place on the proposed IGCC site. These include:

- A stone terminal along the rail spur that is leased to Headwaters, Inc.;
- A communication tower operated by Delmarva Power; and
- A section of 230 kV Delmarva power line that runs across the site.

Headwaters, Inc. has been notified that this property may be made unavailable at the end of their current lease term. Delmarva Power has also been informed that the tower and power line may have to be relocated to other NRG property nearby.

Figure 7-1 Indian River Site Plan



7.2 Zoning

The entire site is outside any incorporated municipalities, and is therefore subject to the zoning regulations of Sussex County. A majority of the Indian River site is currently zoned HI-1, Heavy Industrial District, with power generation as its existing use. However, the proposed project site is located in an overlay zone identified as an environmentally sensitive developing area.

According to the Sussex County Land Use Plan, the intent of this overlay is to give special consideration to environmental issues for proposed developments by promoting a high percentage of open space for buffers and habitat protection. According to the Sussex County Plan, inclusion in a developing area does not automatically permit a property to be rezoned or developed. Rather, proposed development must meet the requirements of Ordinance No. 1152 adopted July 8, 1997. Industrial uses are permitted in this zone as long as the environmental impacts of projects are minimized. Prior to approval of any preliminary plan for a major development, a report detailing required public facilities and environmental impacts must be submitted and approved. The EIS prepared in accordance with the Coastal Zone Management

Act Permit will meet the requirements for this report and our investigations to date indicate that development of the Indian River IGCC Project should be a permissible use in this area.

Figure 7-2 Land Use in Vicinity of Site



Figure 7-2 is a map of the land use in vicinity of the proposed Indian River IGCC Project site.

Table 7-2 shows a general breakdown of land use within a 1.5 mile radius of the site, which encompasses areas outside of the incorporated municipalities of Dagsboro and Millsboro. Land uses in the immediate area are primarily agricultural and forested, with clear cut areas to the north of the site, and intermittent low-density residential and industrial uses.

Table 7-2 Project Area Land Use*

Land Use Category	Acres	Percent of Total Land Use
Forest	1,470.5	32.5
Agriculture	1,322.5	29.2
Water	539.2	11.9
Residential	350.7	7.8
Wetlands	310.2	6.9
Extraction / Cleared	223.4	4.8
Industrial / Urban	210.6	4.7
Rangeland	100.4	2.2
Total		100%

* 1.5 mile radius of Project Site

7.3 Land Use Permits

The Indian River site is permitted for the existing use of power generation and is therefore not subject to further local approval. However, although it is zoned Heavy Industrial, due to the scale of the Indian River IGCC Project and the expansion into some areas that are not developed, it will likely require a site plan review by the Sussex County Board of Adjustment. The authority for this review is provided under Article XXVII of the Code of Sussex County and requires a public hearing prior to Board of Adjustment review. It is anticipated that the County's technical review of emissions and potential impacts of these emissions will be deferred to the State as described in § 115-111 of the Code:

The following uses... ["Power, light or steam plant, central generating station" is specifically mentioned] ...may, if not in conflict with any state or county law or ordinance, be located in the HI-1 District only after the location and nature of such use shall have been approved by the Board of Adjustment after public hearing as provided in Article XXVII. The Board shall review the plans and statements and shall not permit such buildings, structures or uses until it has been shown that the public health, safety, morals and general welfare will be properly protected and that necessary safeguards will be provided for the protection of water areas or surrounding property and persons. The Board, in reviewing the plans and statements, shall consult with other agencies created for the promotion of public health and safety and shall pay particular attention to protection of the county and its waterways from the harmful effects of air or water pollution of any type.

The project site is entirely within an unincorporated portion of Sussex County within Council District 4. Sussex County regulates the construction activities under § 52-21 of the County Code, which requires an application for a Building Permit to be approved by the County Building Official prior to any construction or demolition. The land use permits required for the IGCC project

include the Coastal Zone Management Act Permit and the Report required by Sussex County Ordinance No. 1152.

7.4 Planed Land Use

The Indian River IGCC site is planned for power plant use; an extension of its current use. It is zoned as such, and the local community expects this continued land use. The 2003 Sussex County Master Plan Update⁴ has general guidelines and plans for development in the region. Land use changes near the site are not anticipated. The area is mapped as an Environmentally Sensitive Area on the County Zoning map, and much of the nearby agricultural land is mapped in the Master Plan Update as having development rights purchased. Energy conservation and support for controlled growth are described in the plan. Air pollution, as it is related to the transportation industry, is discussed but there is no specific mention of stationary energy facilities is included in the Master Plan.

7.5 Brownfields/Industrial Site Designation

The Indian River Site is an existing industrial site currently utilized for power generation and zoned heavy industrial. The site is not presently a state-certified Brownfield; however, its is already zoned for heavy industrial use and shares facilities with an existing heavy industrial development.

7.6 Socioeconomic Impacts

Visual Landscape Impacts

The landscape of the existing Indian River Generating Station is characterized by power plant buildings, stacks, transmission lines and towers, a coal pile, and coal ash landfill. The location of the Indian River IGCC Project is on a portion of the plant site south of the existing generating station between Power Plant Road and the existing coal ash landfill. The topography of the site is relatively flat with low elevations that range from approximately five to 25 feet above mean sea level. There are no significant natural topographic features on the site requiring protection. Immediately adjacent to the proposed Project Site are agricultural areas and a few rural residences along Bunting and Power Plant Roads.

The location of the existing Indian River Generating Station on Burton Island and the abundant vegetation along the public roads leading to the plant effectively shield all but the tallest components, the stacks, from most public locations along Power Plant, Bunting, and Iron Branch Roads. The plant is visible only from only select locations in Millsboro, from boat traffic on the Indian River, and from portions of Route 24 on the north side of the river. Figure 7-3 shows views of the plant from locations surrounding the existing Indian River Generating Station. Views are provided from the plant entrance, from various locations on Bunting and Iron Branch Roads, from Millsboro, and from across the river. Because of its setback location, the Indian River IGCC Project will be less visible than the existing plant from the river, but potentially slightly more visible from public roads and locations to the south and west of the site.

⁴ 2003. Sussex County, Delaware. Master Plan Update.
<http://www.sussexcountysde.gov/departments/countycouncil/CompleteCompPlan.pdf>

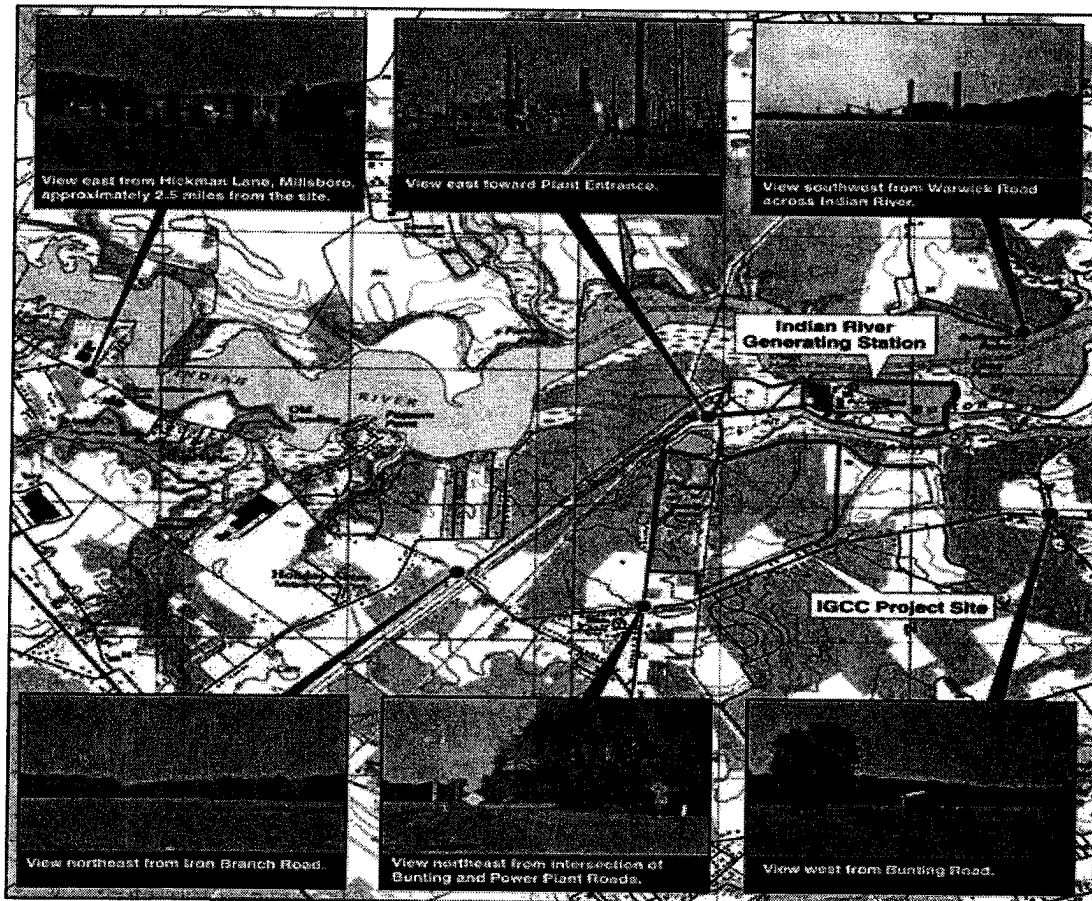
Visibility Impacts

Visually sensitive resources are defined by the US Forest Service, *Landscape Aesthetics: A Handbook for Scenery Management*. Visually sensitive resources typically include: buildings on the National or State Register of Historic Places, scenic highways, state parks, and urban cultural parks. The closest designated scenic drive to the proposed Project Site is US 1 from Dewey Beach to Ocean City, Maryland. The closest point of the scenic drive to the Project Site is over nine miles away. Cape Henlopen State Park and Delaware Seashore State Park are located approximately 13 miles north-northeast and eight miles northeast of the Project Site, respectively. The closest State Scenic River is Pocomoke River, located approximately 8.5 miles southwest of the Project Site. There are several National Register of Historic Places (NRHP) in and around Millsboro. The proposed Indian River IGCC Project will not be visible from any of these locations due to the distance, flat terrain, and/or vegetation between the scenic resources and the site.

Potential Impacts and Proposed Mitigation During Construction

Adverse aesthetic impacts are defined as impacts resulting when the mitigating effects of perspective do not reduce the visibility of an object to insignificant levels. A visual impact may also be considered in the context of contrast. The industrial nature of the proposed Project Site and the current presence of a power generating complex reduce the extent of views considered significant based on technical, public, and institutional considerations. Construction equipment may be visible from surrounding areas but will be a temporary and insignificant impact.

Figure 7-3 Views of the Existing Indian River Plant, Millsboro, Delaware



Potential Impacts and Proposed Mitigation During Operation

The existing Indian River plant, particularly its stacks, is visible from several sites as shown in Figure 7-3. Visual impacts may result from the proposed IGCC Project as a result of construction of a new gasification complex, cooling towers, stacks, and a flare. However, the new facilities will be lower than the existing stacks, and screened from the north by the existing plant. The change in the existing views will not be significant, since the site will appear to have additional structures of a nature similar to those already located there. The views of the IGCC facilities that will exist are not from sensitive resource areas. Mitigation measures will include retention of natural vegetation plantings to be used as buffer screens.

A visual impact assessment will be conducted to determine the extent and significance of project visibility. Viewshed analysis and visual renderings will be conducted at select locations surrounding the site to evaluate the change in the visual landscape as a result of the Indian River IGCC Project. The assessment will determine the impact of development upon aesthetic resources and identify potential mitigation strategies to avoid, eliminate, or reduce impacts.

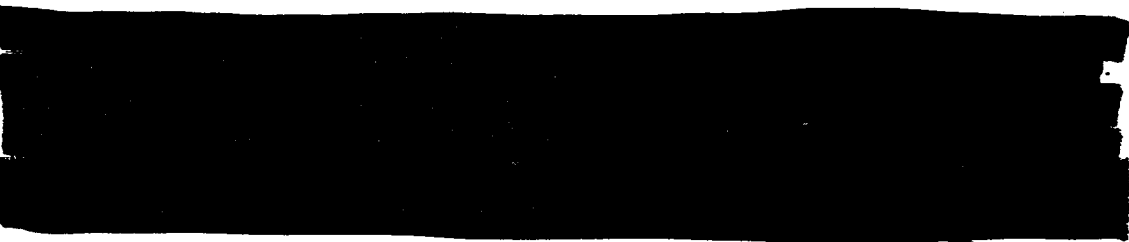
Archaeological and Historical Sites

The area is located south of Burton Island inland of Island Creek, which flows into the Indian River about three miles east of Millsboro. The historical importance of this location was recognized long ago. The Native Americans that inhabited coastal Worcester County, MD, the Assateagues, began to move northwest to the head of the Indian River during the middle 1600's under pressure from the English settlements. In the late eighteenth century an earthen dam and bridge were constructed at Millsboro. The river was the boundary between the Colonies of Maryland and Delaware. Rural farming communities had existed in the area since the early 1700's. The Burton family purchased a substantial amount of land that was used as a plantation in the area known as "Old Landing," which is about one mile west of the project area.

In the early 1800's the area saw the growth of over 15 sawmills within four miles of Millsboro. There was a tannery, a cypress shingle operation, and an iron foundry, along with sawmills. Until recently, the timber and agriculture industries were the mainstay of the local economy. Since the 1930's, the poultry business excelled over the seasonal agricultural operations of tomato canneries, holly wreaths, strawberry cultivation, and orchards. The poultry business still plays an important role in the local economy⁵.

The area of the proposed Indian River IGCC Project construction encompasses approximately 189.3 acres of mostly vacant land adjacent to the existing landfill. It includes an area of unpaved roads that includes a small Scale House for the landfill, a communications tower, a power line, and a stone terminal leased to a materials supply company near the railroad siding.

The existing facility, north and across Island Creek from the proposed IGCC Site, is a 91.1 acre highly developed industrial landscape with a large plant that contains generating units 1, 2, 3, and 4 built between 1957 and 1980.



⁵ <http://www.millsboro.org/HistoryofMillsboro.html>

[REDACTED]

In the event Section 106 of the National Historic Preservation Act of 1966 is applicable to the Indian River IGCC Project, the Delaware Division of Historical and Cultural Affairs ("DHCA") will be consulted in regard to the cultural resource investigations and evaluations at the Area of Potential Effects ("APE"). As part of this consultation, NRG will examine the Delaware Master Site Files in order to identify the locations of the previously discovered sites, and if necessary, develop site evaluation procedures. If compliance with Section 106 is not mandatory, NRG will consult with the Department of Natural Resources and Environmental Control ("DNREC") as to appropriate steps in the cultural resources management process.

Landmarks and Sensitive Areas

The Indian River Site has a long history of being an industrial site, but the surrounding area has a rich history, as discussed in the preceding section. Table 7-3 includes all the State-listed landmark sites within approximately three miles of the site. None of these are on NRG property or within clear view of the site, although some of them may have distant views of the existing stacks.

Sensitive areas would include parks, schools, hospitals, or other uses that are not compatible with the industrial site. There are no such facilities within 1.5 miles of the site.

Table 7-3 Historic Landmarks within Three Miles of the Indian River Site

Site Name	Address	Location	Listed
Carey's Camp Meeting Ground	W of Millsboro off DE 24	Millsboro	1973-03-14
Davis, Robert, Farmhouse	S of Rt. 24	Millsboro	1979-04-26
Harmon School	S of jct. of Rt. 24 and CR 297	Millsboro	1979-04-26
Harmon, Isaac, Farmhouse	CR 312A	Millsboro	1979-04-26
Harmony Church	Rt. 24, E of CR 313	Millsboro	1979-04-26
Hitchens, Ames, Chicken Farm	N of Rt. 24	Millsboro	1979-04-26
Indian River Archeological Complex	Address Restricted	Millsboro	1978-12-15
Johnson School	Rt. 24 between CR 309 and 310	Millsboro	1979-04-26
Perry-Shockley House	219 Washington St.	Millsboro	1985-09-05
Prince George's Chapel	E of Dagsboro on DE 26	Dagsboro	1971-03-24
Warren's Mill	NW of Millsboro on DE 326	Millsboro	1978-09-13
Wright, Warren T., Farmhouse Site	Address Restricted	Millsboro	1979-04-26
Houston-White Company Mill & Basket Factory,	Main Street & Railroad Avenue	Millsboro	Not Available
White House Farm	Long Neck Road vicinity at Indian River Bay	Oak Orchard	Not Available
Dagsboro Historic District	Center of Dagsboro	Dagsboro	1998

Noise

The noise statutes, regulations and guidance potentially applicable to the Indian River IGCC Project include:

- Noise Regulations of the State of Delaware - Part VII, Title 7, Chapter 71 of the Delaware Code; and
- The Code of the Town of Dagsboro, Chapter 173.

Delaware noise limits for industrial sources are shown in Table 7-4.

Table 7-4 State of Delaware Noise Limits (dBA) From Industrial Sources (§71-1-6)

Time Period	Receiving Land Use Category		
	Residential	Commercial	Industrial
7:00 AM – 11:00 PM	65	65	75
11:00 PM – 7:00 AM	50	65	75
In addition, a source shall be considered to cause a noise disturbance if the sound level, emitted by such source exceeds the ambient noise level by 10 dBA at the point of complaint within the receiving property.			

Potential Impacts and Mitigation During Construction

Potential noise impacts for the Indian River IGCC Project include temporary noise levels generated by construction activities related to the installation of the IGCC process and materials handling equipment. Construction noise sources include both mobile sources such as trucks, cranes, backhoes and stationery sources such as compressors, pile drivers and power tools.

Proposed mitigation measures for noise impacts during construction include:

- Limit construction activities;
- Provide impact noise producing equipment, with noise attenuating shields, shrouds or portable barriers or enclosures, to reduce equipment operating noise;
- Select truck routes for material delivery and spoils disposal to avoid impact on noise sensitive receptors; and
- Ensure that proper mufflers, acoustical lining or acoustical paneling for other noisy equipment, including internal combustion engines, is used.

Potential Impacts and Mitigation During Operation

The operation of the proposed IGCC equipment once installed - such as reactor vessels, gas turbines, heat recovery steam generators, flares, fans, and pumps - may contribute to noise levels at the nearby residential area. Proposed mitigation measures and the shut down of some existing equipment will reduce noise impacts on the adjacent residential areas. Noise mitigation features for the operation phase will include:

- Selection of equipment with low-noise design;

- Enclosure of combustion turbines and heat recovery steam generators in buildings; and
- Installation of shielding and sound insulation on equipment.

Compliance with regulatory limits for noise will be verified with noise impact assessment models. Noise predictions will be developed for the various phases of construction and during operation.

Transportation Impacts

Roadway access to the region is via U.S. Highway 113, the major north-south highway in this area. Route 113 connects with Route 13 to the south, which carries traffic to Virginia via the Chesapeake Bay Bridge-Tunnel and Route 1 to the north in Dover, Delaware that leads to Interstate 95. In addition, Route 113 provides access from the north via Route 404 to Route 50 and thence to the Chesapeake Bay Bridge. These are all limited access roads that carry large volumes of truck and auto traffic. The local access from Route 113 is to Route 20, Dagsboro Road, to either Thorogoods Road or Firetower Road, to Iron Branch and Bunting Roads and then to Power Plant Road. These are two lane roads but they have very light traffic loads and are normally flowing freely. Local roads and truck routes are shown in Figure 7-4.

Rail provides access to the plant for delivery of fuel, supplies, equipment, and other material. A rail spur from the main trunk line that connects the Delmarva Peninsula to Philadelphia to the north services the existing plant site. This line was originally operated by the Philadelphia, Wilmington, and Baltimore Railroad, then the Pennsylvania Railroad, Conrail, and by Norfolk Southern since 1999⁶.

The Indian River is a recreational waterway that receives non-commercial and pleasure boat traffic. There is currently no dock at the Indian River Generating Station for the delivery of coal and other equipment.

Potential Impacts and Proposed Mitigation During Construction

Potential impacts to local traffic and parking may occur during construction. It is anticipated that construction will generate over 1,000 jobs during the peak construction period. Proposed mitigation includes:

- Providing adequate on-site and off-site parking for construction employees;
- Use of rail for delivery of heavy and oversize equipment;
- Avoiding peak commuting hours for deliveries of heavy and oversize material by roadways; and
- Use of truck routes to avoid any impacts to schools and sensitive receptors to the greatest possible extent.

Potential Impacts and Proposed Mitigation During Operation

Traffic volume related to the operation of the existing Indian River Generating Station is accounted for as part of current traffic patterns in the area. It is anticipated that the proposed IGCC Project will add approximately 100 permanent employees to the site. These will be divided into shifts, with somewhat more than half of the new employees working the regular Monday

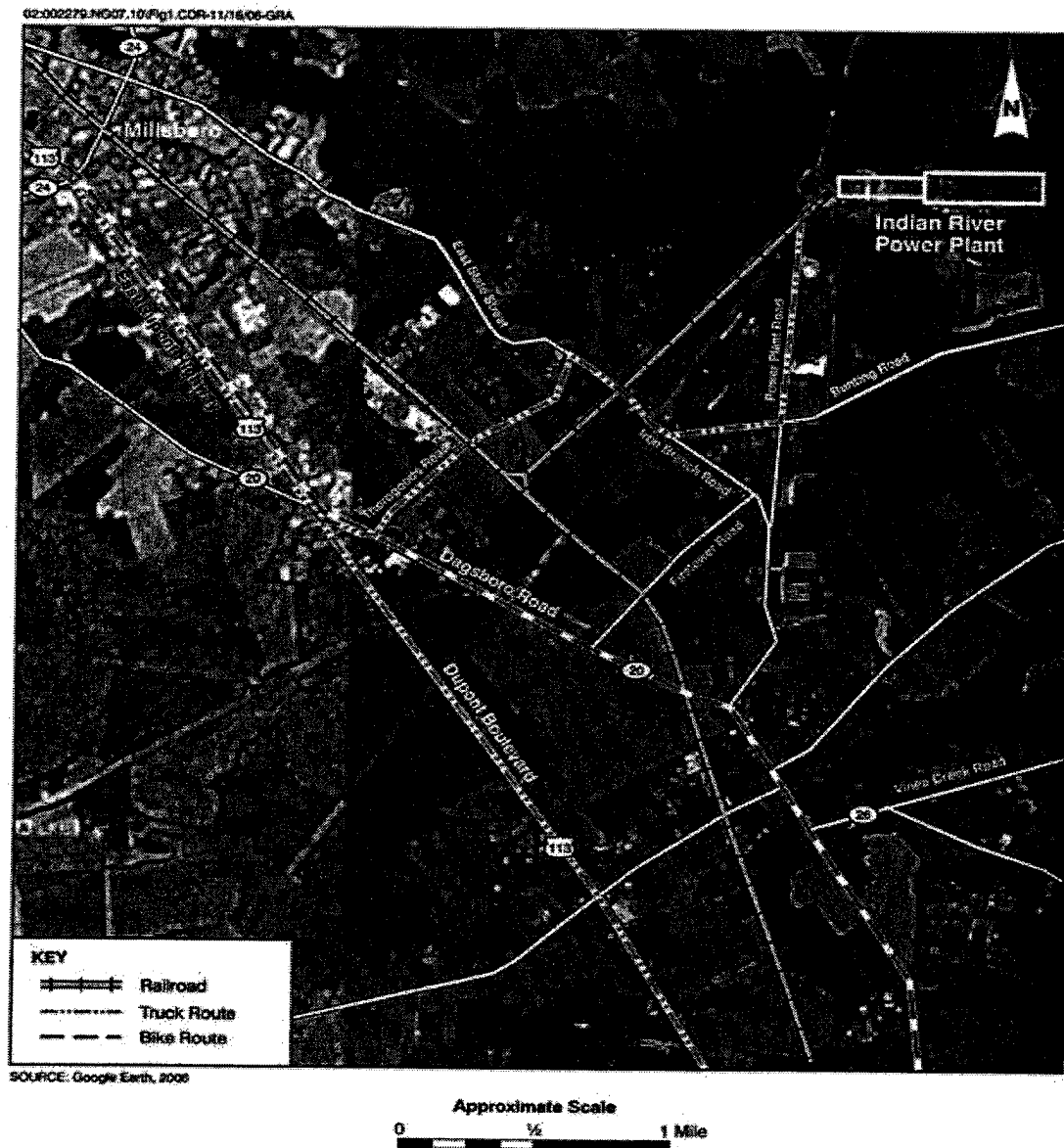
⁶ Norfolk Southern Railroad.

<http://www.nscorp.com/nscorp/application?origin=header.jsp&event=bea.portal.framework.internal.refresh&pageid=home>

through Friday daytime shift. It is expected that the local commercial roads can accommodate this additional traffic without any degradation of service. On-site parking will be provided for the plant staff.

To verify expectations that traffic impacts during construction and operation will be minimal and that any potential impacts can be effectively mitigated, a traffic study will be performed in accordance with the Highway Capacity Manual and subsequent to agency consultation. The Traffic Impact Study will include a description of the pre-construction characteristics of the local secondary roads, and access from these secondary roads to U.S. Route 113. These conditions will be evaluated for existing traffic and pedestrian activity and analysis of trip generation characteristics during both construction and operation.

Figure 7-4 Local Road Network, Truck Routes



FAA Impacts

The Federal Aviation Administration ("FAA") reviews construction in accordance with 49 CFR Part 77 that could intrude on airspace⁷. A review of FAA Form 7460-1 was conducted to screen the proposed project for any impacts on federal and local airspace. The relevant criteria that trigger a review by the FAA are identified and discussed below:

1. Any construction or alteration of more than 200 feet in height above ground level at its site.

Note that this notification is not required if the new structure or object would be "shielded by existing structures of a permanent and substantial character." Thus this criterion for notification is not met if the new stacks do not exceed the height of the existing stacks and they are sufficiently close to the existing stacks to be shielded by the existing stacks. The current conceptual design is for stacks and heights of facilities that will not exceed the height of the existing stacks, of which the tallest is 500 feet. This criterion will be reviewed once more against final design information.

2. Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of several slopes, the longest of which is 20,000 feet from the nearest point of the nearest runway of an airport or heliport that is either available for public use and listed in the Airport Directory of the Aviation Information Manual or operated by the Armed Forces.

There are no airport runways or heliports within 20,000 feet of the site. The closest public use airport is Georgetown, Sussex County Airport. The closest runway at this airport is 8.9 miles from the closest corner of the Indian River Site. There are several private airports that are closer than the Georgetown, Sussex County Airport, including West Private Airport, 6.3 miles to the south-southeast of the site. It is reported to be owned by Richard E. West⁸. Next closest, and only two miles south of the Georgetown, Sussex County Airport, is Joseph's Airport. It is 8.8 miles northwest of the site and is reported⁹ as being owned by Melvin L. Joseph Const. Co. of Georgetown, DE.

In addition to a general prohibition of flying below 500 feet above ground level over inhabited areas and 1,000 feet over developed areas, the FAA restricts flying near power plants.

The characteristics of the exhaust gas, particularly temperature, from the stacks and from the gasifier flare were considered in terms of potential FAA impacts. The exhaust gas from the stacks would not be hotter than the current conditions. The flare exhaust characteristics analysis was conducted using the SCREEN3 model to consider the vertical extent of the flare emission. Conservative assumptions were made that included no wind and cold ambient temperature (0° C) to maximize the temperature differential and minimize horizontal mixing.

The plume would be a rising column of gas with some vertical velocity due to the temperature difference from the ambient air; initially after exiting the stack it would rise at its highest vertical velocity; as it rises it would curve away from the release point and the vertical velocity would continuously decrease as ambient air would mix in and cool the plume; when it reaches its stable plume centerline height of about 900 feet it would no longer be a rising column of air and its temperature would be equilibrated with ambient temperatures at that altitude. There will not be

⁷ FAA guidance on notifications of alterations to airspace are available at

http://www.faa.gov/airports_airtraffic/airports/resources/forms/index.cfm?sect=airspace,construction,design

⁸ <http://delaware.airportbug.org/airport-3267.html>

⁹ <http://delaware.airportbug.org/airport-3250.html>

any vertical movement of air outside of the plume from inertia above 900 feet because the plume would not push ambient air up and out of the way while it rises, instead ambient air would continuously mix into the plume to dilute and cool it as the plume rises to its stable height. The plume width would be approximately 100 meters at the 890 foot altitude. Given the FAA prohibition of flying below 1,000 feet over developed areas and of flying near power plants, no impacts to air traffic are anticipated.

Economic Development

Sussex County and the Millsboro Division (which is located in the central portion of the County) are primarily rural in nature, and include second home/vacation residential properties as well as permanent, year-round residents. There is a relatively diverse mix of occupations and income-levels located within the County. Economic statistics for the Millsboro Division including average income and employment are lower than the same indicators for Sussex County, flagging that the town offers slightly less economic opportunity than other areas of the County. As evidenced by Table 7-5, Sussex County has the lowest median income of all three Delaware counties.

Table 7-5 Delaware Median Income by County

	Kent County	New Castle County	Sussex County
Median household income in 1999	\$40,950	\$52,419	\$39,208

Potential Impacts and Proposed Mitigation During Construction

Overall, socioeconomic impacts of the Indian River IGCC Project in the local communities are expected to be positive. During the construction phase of the project, it is estimated that over 1,000 temporary construction jobs will be created. Most of the temporary construction workers are expected to come from the Delaware and Metro Washington DC/Baltimore area and, to the extent practicable, local workers from Sussex County will be utilized. Thus, there will be minimal community and housing impacts associated with the influx of workers (i.e., limited temporary housing would be required). There will be no displacement of local residents or businesses associated with the construction, since the construction activity will be contained within the current footprint of the Indian River site.

A portion of this spending will be absorbed by the local community (the Millsboro Division and Sussex County) through potential employment, secondary spending, and taxes.

Potential Impacts and Proposed Mitigation During Operation

During the operation phase of the Indian River IGCC Project, approximately 100 additional, full-time positions will be required. It is anticipated that the majority of these positions will be filled by individuals from the local labor force. This creation of jobs in the local community will be a positive overall impact to the Millsboro Division and Sussex County. Also, since the majority of the positions will be filled locally, it is estimated that there will be no displacement of local residents or businesses associated with the operation of the plant. The only business requiring relocation, the existing Stone Terminal operated by Headwaters, Inc., on the site, will either be shut down or relocated to a nearby location. If future employees do move from outside of the area, the housing inventory and vacancy rate indicate sufficient room in the local community to absorb newcomers.

It is not anticipated that there will be any need for mitigation measures for the operation phase of the Indian River IGCC Project with respect to socioeconomic issues.

8 Interconnection

In keeping with goals and criteria set forth in Delaware's Electric Utility Retail Customer Supply Act of 2006, the Indian River IGCC Project will have little to no impact on Delmarva's existing transmission system, require no new transmission lines or major upgrades in Delaware, and will be easily interconnected to Delmarva's existing Indian River substation at a low nominal cost to be borne by the Project.

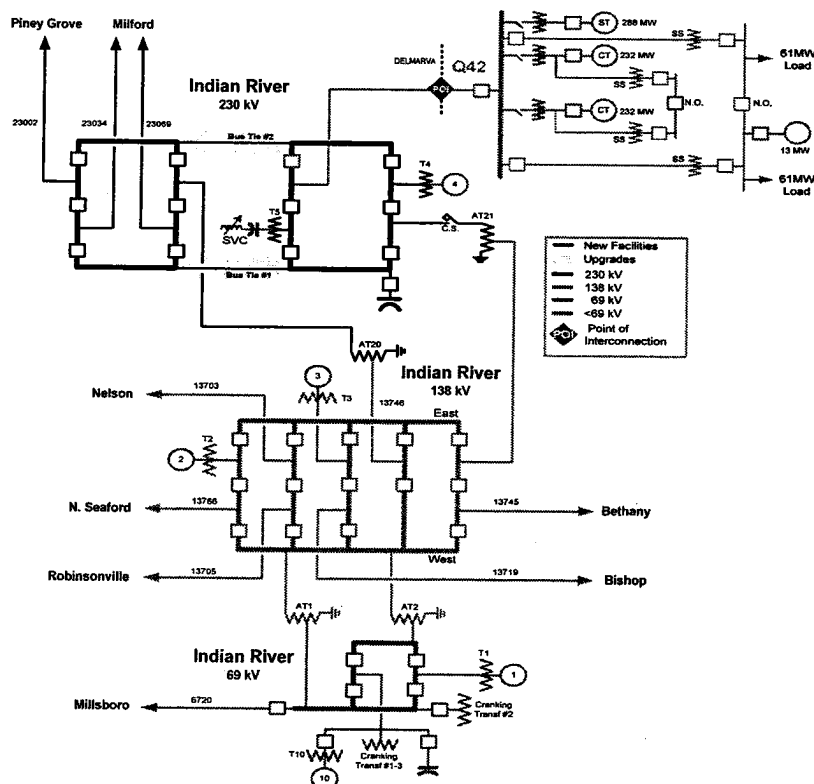
8.1 Interconnection Status

PJM's interconnection study process is clearly defined in Attachment X of its Open Access Transmission Tariff and applies to all large generators seeking to tie into the PJM transmission system. This is a FERC-approved document and establishes deposit requirements, study timelines and study scope guidelines. To date, the Indian River IGCC Project has been certified in the PJM interconnection queue, PJM has completed the Feasibility Study and NRG has executed an Impact Study Agreement with PJM. The Impact Study is underway and expected to be completed by May 2007.

NRG has requested that the Indian River IGCC Project be interconnected at the Delmarva Indian River 230 kV substation. It is anticipated that an expanded switchyard will be required. A preliminary one-line diagram of the proposed Indian River 230kV interconnection is depicted in Figure 8-1 below.

Based on NRG's interconnection status, we do not anticipate any delays regarding electrical interconnection for the Indian River IGCC Project.

Figure 8-1 One Line Interconnection Diagram



8.2 PJM Interconnection Studies

Feasibility Study Results

In June, 2006 NRG submitted a request to PJM for interconnection of a 630 MW IGCC unit to the Indian River 230 kV substation of Delmarva Power. The project is listed as number Q42 in PJM's Generation Interconnection Queue. Since commencing interconnection studies, subsequent engineering studies commissioned by NRG have resulted in the project size being reduced to 600 MW instead of 630 MW. NRG's engineers believe this reduction in net output will have no material impact on the results of the interconnection studies.

In September, 2006 PJM completed and issued its feasibility for the project titled "PJM Generator Interconnection #Q42 Indian River 630 MW Feasibility Study Report". The results of the study indicate that the project is feasible as proposed.

Network impacts are considered minimal with New System Reinforcements estimated to be \$1,214,000. There were no identifiable short circuit problems.

The Indian River IGCC Project does appear to contribute to previously identified overloads external to the Delmarva system caused by other higher queued projects in PJM's Interconnection Queue. Assuming that some or all of these projects go forward, the Indian River IGCC Project will have some allocation of cost responsibility for upgrades funded by prior queued projects. NRG's cost responsibility allocation at this time is estimated to be \$5.8 million.

The interconnection at Delmarva's Indian River substation will add one 230 kV circuit breaker and related equipment (disconnect switches, relaying metering, etc.) to provide an interconnection point for a short (approximately 0.5 mile) 230 kV line from the Project to the substation. PJM's estimated cost for this interconnection is \$1,842,000 with an estimated 18 months to construct.

All interconnection costs are summarized in Table 8-1 and will be borne by the Project.

Table 8-1 Estimated Project Interconnection Costs

	Cost (\$MM)
System Reinforcements	\$1.214
Substation Interconnection	\$1.842
Possible Upgrade Allocation (due to projects in PJM queue outside Delmarva system – only if built)	\$5.800

System Impact Study Application

In October, 2006 NRG executed the Impact Study Agreement with PJM for the Indian River IGCC project. Completion of the System Impact Study by PJM is targeted for May, 2007.

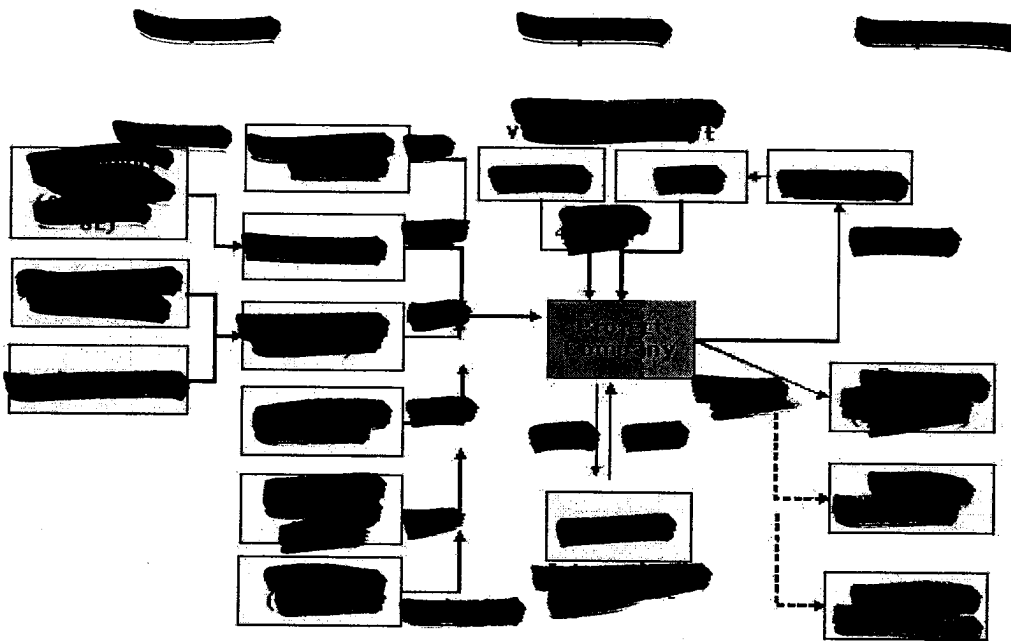
9 Financing

9.1 Ownership Structure

NRG plans to utilize a traditional non-recourse project financing structure during the construction and operating phases for the Indian River IGCC Project that are supported by the cash flows from the Power Purchase Agreement ("PPA").

Non-recourse financing structures are commonly used to fund the acquisition or construction of long-lived infrastructure assets, such as power plants, and are based upon a financial structure where project debt and equity used to finance the project are paid back from the cashflow generated by the project. The financing will be secured by the Indian River IGCC Project itself, including the PPA, and will utilize a special purpose entity. The anticipated project structure is shown in Figure 9-1.

Figure 9-1 Project Structure



9.2 Project Financing Plan

Debt and Equity Funding

Based on discussions with various commercial and investment banks, NRG anticipates that the Indian River IGCC Project will be funded with approximately 65% debt and 35% equity during the construction period, moving to a capitalization of approximately 70% debt and 30% equity for the term lending following the commercial operation date of the facility.

Although NRG is able to supply 100% of the required equity, it intends to join with equity partners, who, by virtue of their core businesses and expertise, are in a position to contribute additional value to the Indian River IGCC Project to assure its success. Even with third parties having equity in the Indian River IGCC Project, NRG plans to retain a material ownership interest in the project, reflecting its strong commitment to Delaware and IGCC technology. Sources of NRG's cash equity contribution will include NRG's current cash balance as well as future cash flows generated by its existing operations. [REDACTED]

To date, initial development and engineering activities for the Indian River IGCC Project have been funded by NRG corporate funds and no project debt has been used or assumed. NRG clearly understands the magnitude of financing required for this undertaking and has the financial resources, credibility with the financial markets (as evidenced by NRG's multiple multi-billion dollar debt financings executed during 2006), and in-house expertise available to implement this plan and complete the Indian River IGCC Project on budget and on schedule. Attached are examples of the over \$10 billion in financings that NRG has successfully completed over the last two years:

- December 2004: Senior Debt Refinancing, involving over \$800 million of term loans and \$420 million of preferred stock;
- August 2005: \$250 million of preferred stock;
- January 2006: Financing for Texas Genco acquisition, involving \$5.5 billion of senior loan facilities, \$3.6 billion of unsecured debt and \$500 million of convertible preference shares;
- August – October 2006: \$334 million of non-recourse debt utilized in a leveraged stock buy-back structure; and
- November 2006 Financing for Hedge Reset transactions, involving \$1.1 billion of unsecured bonds and \$500 million synthetic letter of credit facilities.

These significant transactions highlight NRG's ability to successfully access the capital markets, while at the same time retaining a capital structure for NRG overall of around 55% debt – conservative in its industry.

Debt financing for the Indian River IGCC Project will include several tranches of debt with various terms and maturities syndicated among a broad range of domestic and international banks and financial institutions. NRG has already canvassed the lending markets to determine which institutions would be receptive to participating in such a loan facility including marquee institutions [REDACTED]. Each has expressed its interest in serving in a lead role in a project finance syndication for the Indian River IGCC Project. NRG has also discussed with potential lenders the financial model for the Indian River IGCC Project and the key assumptions and conditions under which the planned project financing could take place. In parallel with negotiation of a financeable PPA for the Indian River IGCC Project, NRG will seek formal proposals from the lending community for a project finance package.

To provide evidence that the market conditions assumed by NRG for the Indian River IGCC Project are consistent with those required by commercial lenders, NRG has included a letter from [REDACTED]

[REDACTED] confirming their views that the Indian River IGCC Project is suitable for non-recourse project financing and their willingness to consider arranging this financing, [REDACTED]

Figure 9-2

NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540

RE: Delmarva Power's Request for Proposals (RFP) for New Generation Resources

This letter is being written in support of the NRG Energy, Inc.'s ("NRG") response to Delmarva Power's ("Delmarva") request for proposal for the construction of new, cost-effective generation resources in Delaware to provide electricity to the utility's Standard Offer Service customers.

As you know, [REDACTED] has been in discussion with NRG over the last year regarding its planned power project development initiatives identified in the Repowering America program. As the top global arranger of project finance loans, we believe there is significant appetite for financing many of these project initiatives, including your proposal to Delmarva.

Our discussions have focused particularly on the economic and environmental benefits of developing Integrated Coal Gasification Combined Cycle ("IGCC") power plants in the United States. As outlined below, [REDACTED] has significant experience in financing IGCC plants in Europe where the technology is recognized for its many economic and environmental benefits and has evolved from its early stages in the mid 1990's.

[REDACTED] has been recognized over that last two years as the global leader in project and structured finance. [REDACTED] is able to compliment this expertise with a suite of additional financial products, including derivatives, leverage finance and capital market products. With a particular focus on power, [REDACTED] in North America is currently active in the project finance market with several lead roles in financing traditional power plant technologies as well as renewable technologies.

[REDACTED] has also been involved in financing, in a lead role basis, all of the IGCC plants in the European project finance market since the mid-1990's, including projects in Spain, Italy and the Netherlands. We have experience with a variety of IGCC technology providers. [REDACTED]

[REDACTED] We have the added experience of working through early

Page 1 of 2

challenges to the technology and have successfully refinanced projects that have reached efficient, profitable and targeted performance standards. These performance standards are on par with the expected performance standards of a traditional combined cycle power plant.

We support NRG's efforts as a proven power project developer to finance, build, and operate IGCC plants in the US. We further support your proposal to use the Indian River Plant as an ideal application of IGCC technology to meet Delmarva's need for long-term, cost-effective power supply under a tightening environmental compliance regime.

We have reviewed your brownfield development plan to use the Indian River Plant as the IGCC plant. We agree that use of the existing site limits many of the challenges and costs associated with the greenfield development of an IGCC project. We have also reviewed the form of PPA provided by Delmarva that would constitute the off-take arrangement and obligations of the project. Undoubtedly, a contracted revenue source will be vital to any project financing of the plant and the proposed schedule appears to accommodate the construction of an IGCC plant.

[REDACTED]

While further refinements to a financing plan are expected as you proceed through the RFP process, we believe there is a strong market for the fundamentals of the plan and the application of this established technology in the US market. Some refinements would be required for the construction of an IGCC plant. Overall, however, we believe a financing plan could be achieved that allows for cost-effective long-term power supply with significant environmental benefits. While we remain open to pursuing multiple debt markets, we believe the appetite is particularly strong among project finance lenders who are more willing to assume construction risk.

Given our large presence in North America and our knowledge of IGCC financing from Europe, we believe that we are ideally suited to implement a financing plan for your proposal to Delmarva and will contribute to successful commercial deployment of IGCC. [REDACTED] would be pleased to act as a lead arranger for any forthcoming financing of your Delmarva proposal. Please note that this letter does not represent a commitment to finance your IGCC proposal, as any such commitment is subject to further due diligence and standard credit approvals. As

always, we are available for any questions on our capabilities described herein. We look forward to working with NRG to share our US capabilities and European successes and finalize an achievable financing plan for your proposal to Delmarva.

Sincerely;

[REDACTED]

[REDACTED]

Figure 9-3 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540

[REDACTED]

[REDACTED] is pleased to provide this letter in support of NRG's bid in response to Delmarva Power & Light's ("Delmarva") Request for Proposals for Generation Capacity and Power Purchase Agreement to supply 400 MW of baseload generation through the construction of a new 600 MW Integrated Gasification Combined Cycle ("IGCC") project at its existing Indian River generating plant site located at Millsboro, Delaware (the "Project"), under [REDACTED] power purchase agreement ("PPA"). We have been briefed on NRG's development and financing plans for the Project. Based upon our initial discussions and review, we are very supportive of NRG's efforts. If developed and capitalized generally as described to us, and outlined below, we believe that the Project would be suitable for non-recourse construction financing and subsequent term financing following commissioning.

We understand that NRG foresees a debt capital requirement of up to 70% relative to total Project costs. Given the power sale price and operating cost assumptions made by NRG, along with key investment considerations described below, we believe these debt levels will be attainable at a reasonable cost, and [REDACTED] could be willing to consider arranging such a financing.

This offering is one that we would seek to arrange given our abilities to place debt in any of the commercial bank, bond or institutional term loan markets. On the basis of our market-leading knowledge and experience arranging debt in each of these markets, we believe that there will be significant investor appetite for non-recourse construction and term financing of IGCC technology, subject to the investment considerations outlined below, among other usual and customary matters.

Our support of this transaction is a clear indication of [REDACTED] view of the Project's viability as well our view of the appetite in the financial markets for appropriately structured assets of this type. Key investment considerations will include:

- Existence of long-term contracts for the output of the Project with creditworthy counterparties, such as Delmarva, sufficient to permit significant amortization of the debt, with an acceptable debt service coverage ratio cushion, over the life of the offtake contracts;

[REDACTED]

- Acceptable leverage relative to the perceived credit risk of the Project over the life of the debt;
- Project construction undertaken through an appropriately structured fixed-price, turn-key, date-certain EPC contract with an experienced and creditworthy contractor;
- Significant equity commitment to the Project, invested at close of financing or invested over the construction period, with acceptable credit support.

We believe that the involvement of NRG as an equity investor is an important investment consideration for non-recourse lenders. The Sponsor has a track-record of successful development, construction, management and operation of technically complex projects in the power/energy sector, and we understand that NRG has made IGCC a key strategic business initiative.

As the market leader in non-recourse financing for the power sector [REDACTED] is excited about the financing opportunity presented by the Project. We look forward to further opportunities to share our ideas with you about the financing of this important project.

[REDACTED]

We understand that you will place this letter in your bid package to Delmarva with respect to the proposed PPA. To that end, we have attached a few pages hereto detailing [REDACTED] position as the market leader in non-recourse project financing.

Please feel free to forward our contact information to the appropriate parties at Delmarva as a reference. [REDACTED] wishes you continued success in this application and your other endeavors.

Very truly yours,

[REDACTED]

Proposed Project Loan Terms

Table 9-1 summarizes the key financing terms which NRG believes, based on its consultations with leading financial institutions, could be available to the Indian River IGCC Project when financing negotiations commence in 2007, following execution of a long-term, financeable PPA.

Table 9-1 Financing Terms

	Construction and Letter of Credit, First Lien	Construction Second Lien	Take-Out Financing
Lenders	[REDACTED]	[REDACTED] S	[REDACTED]
Prevailing Interest Rate	[REDACTED]	[REDACTED]	[REDACTED]
Loan Term	[REDACTED]	[REDACTED]	[REDACTED]

These terms are generally consistent with those offered for non-recourse energy financings with one notable exception: the debt service coverage ratio is likely to be higher than for facilities which would utilize conventional technology. The requested coverage ratio is particularly important to banks during the critical startup period. A number of the first generation gasification and IGCC facilities a decade ago experienced difficulties during these periods and, even though the technology has advanced and more recent IGCC availabilities have been high, banks will likely look to diffuse technology risks in this way.

9.3 Plan for Letters of Credit

From execution of the PPA until financial close of the Indian River IGCC Project, collateral requirements pursuant to the PPA will be provided directly by NRG. NRG has ample liquidity and access to multiple letter of credit facilities, allowing it to issue up to [REDACTED]

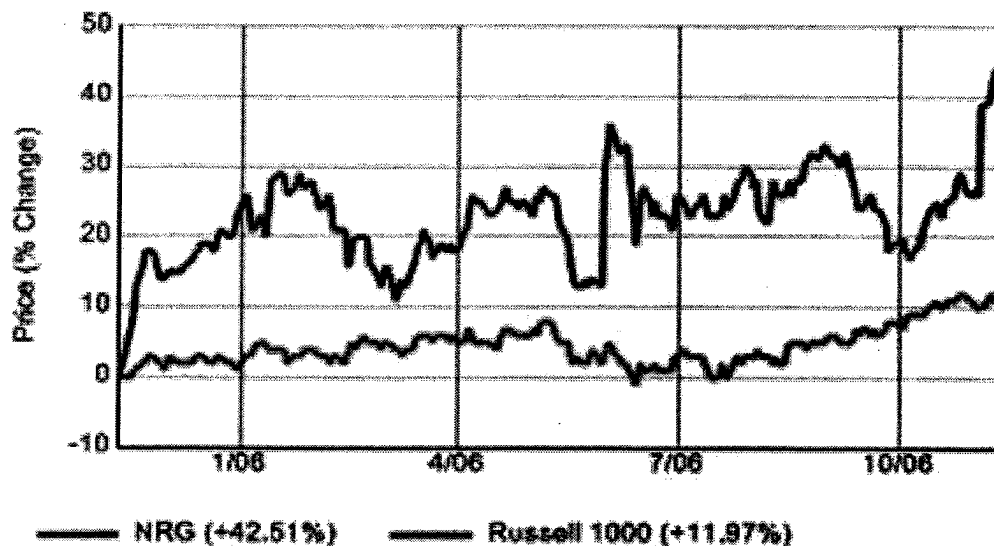
Upon financial closing of the Indian River IGCC Project, a letter of credit facility will be established at the project level with one or more commercial banks, most likely members of the primary lending syndicate to Indian River IGCC LLC. All participating banks will be required to meet the credit ratings requirements defined in the PPA.

9.4 Evidence of Creditworthiness

NRG owns over 24,500 MW of net generation assets worldwide, representing a diversified mix of generation technology, output configuration, and geographical location. This portfolio of assets generates significant cash flow, as indicated in NRG's financial statements and guidance.

NRG is a financially sound company with a total market capitalization of approximately \$7.0 billion and unaudited liquidity of approximately of \$2.5 billion, including \$1.0 billion in cash. [REDACTED]

Figure 9-4 NRG Growth



Given NRG's corporate strength and strategic interest in the success of the Indian River IGCC Project, as well as its proven ability to raise meaningful amounts of capital in the equity and debt markets, NRG has the capacity to ensure the successful financing of the project through development, construction and the operating life of the project.

9.5 NRG's Audited Financial Statements

NRG's audited financial statements begin on the next page. For full information, including Form 10-K, please see NRG's 2004 and 2005 Annual Report in addition to 2006 Form 10-Qs in Appendix 7. The financial statements included in this section are from NRG's 2005 Annual Report.

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Reorganized NRG			Predecessor Company
	Year Ended December 31, 2005	Year Ended December 31, 2004	December 6, 2003 Through December 31, 2003	January 1, 2003 Through December 5, 2003
(In millions, except per share amounts)				
Operating Revenues				
Revenues from majority-owned operations	\$ 2,708	\$ 2,348	\$ 137	\$ 1,798
Operating Costs and Expenses				
Cost of majority-owned operations	2,067	1,489	95	1,354
Depreciation and amortization	194	208	12	211
General, administrative and development	197	210	13	170
Other charges (credits)				
Corporate relocation charges	6	16	—	—
Reorganization items	—	(13)	2	198
Restructuring and impairment charges	6	45	—	237
Fresh start reporting adjustments	—	—	—	(4,220)
Legal settlement	—	—	—	463
Total operating costs and expenses	2,470	1,955	122	(1,587)
Operating Income	238	393	15	3,385
Other Income/(Expense)				
Equity in earnings of unconsolidated affiliates	104	160	14	171
Write downs and losses on sales of equity method investments	(31)	(16)	—	(147)
Other income, net	62	27	—	19
Refinancing expenses	(56)	(72)	—	—
Interest expense	(197)	(266)	(19)	(308)
Total other expense	(118)	(167)	(5)	(265)
Income From Continuing Operations Before Income Taxes	120	226	10	3,120
Income Tax Expense/(Benefit)	43	65	(1)	38
Income From Continuing Operations	77	161	11	3,082
Income/(Loss) on Discontinued Operations, net of Income Taxes	7	25	—	(316)
Net Income	84	186	11	2,766
Preference stock dividends	20	—	—	—
Income Available for Common Stockholders	\$ 64	\$ 186	\$ 11	\$ 2,766
Weighted Average Number of Common Shares Outstanding — Basic	85	100	100	—
Income From Continuing Operations per Weighted Average Common Share — Basic	\$ 0.67	\$ 1.61	\$ 0.11	—
Income From Discontinued Operations per Weighted Average Common Share — Basic	0.09	0.25	—	—
Net Income per Weighted Average Common Share — Basic	\$ 0.76	\$ 1.86	\$ 0.11	—
Weighted Average Number of Common Shares Outstanding — Diluted	85	100	100	—
Income From Continuing Operations per Weighted Average Common Share — Diluted	\$ 0.66	\$ 1.60	\$ 0.11	—
Income From Discontinued Operations per Weighted Average Common Share — Diluted	0.09	0.25	—	—
Net Income per Weighted Average Common Share — Diluted	\$ 0.75	\$ 1.85	\$ 0.11	—

See notes to consolidated financial statements.

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	Reorganized NRG	
	December 31, 2005	December 31, 2004
	(In millions, except shares and par value)	
ASSETS		
Current Assets		
Cash and cash equivalents	\$ 506	\$ 1,104
Restricted cash	64	110
Accounts receivable-trade, less allowance for doubtful accounts of \$2 and \$1	280	270
Accounts receivable-affiliate	4	—
Current portion of notes receivable and capital lease	25	85
Property taxes receivable	43	37
Inventory	260	247
Derivative instruments valuation	404	80
Collateral on deposit in support of energy risk management activities	438	33
Deferred income taxes	4	—
Prepayments and other current assets	125	136
Current assets — held for sale	43	—
Current assets — discontinued operations	1	17
Total current assets	<u>2,197</u>	<u>2,119</u>
Property, Plant and Equipment, net	<u>3,039</u>	<u>3,158</u>
Other Assets		
Equity investments in affiliates	603	735
Notes receivable, less current portion — affiliates, net	103	124
Notes receivable and capital lease, less current portion, net	355	440
Intangible assets, net of accumulated amortization of \$79 and \$55	257	294
Derivative instruments valuation	22	42
Funded letter of credit	350	350
Deferred income tax	26	34
Other assets	125	111
Non-current assets — discontinued operations	354	457
Total other assets	<u>2,195</u>	<u>2,587</u>
Total Assets	<u>\$ 7,431</u>	<u>\$ 7,864</u>

See notes to consolidated financial statements.

NRG ENERGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS — (Continued)

	Reorganized NRG	
	December 31, 2005	December 31, 2004
	(In millions, except shares and par value)	
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities		
Current portion of long-term debt and capital leases	\$ 101	\$ 511
Accounts payable — trade	268	209
Accounts payable — affiliates	—	5
Derivative instruments valuation	692	17
Other bankruptcy settlement	3	6
Accrued expenses	82	57
Other current liabilities	95	109
Current liabilities — discontinued operations	115	173
Total current liabilities	1,356	1,087
Other Liabilities		
Long-term debt and capital leases	2,581	2,973
Deferred income taxes	135	169
Postretirement and other benefit obligations	125	116
Derivative instruments valuation	137	148
Out of market contracts	298	319
Other long-term obligations	81	71
Non-current liabilities — discontinued operations	240	288
Total non-current liabilities	3,597	4,084
Total liabilities	4,953	5,171
Minority interest	1	1
3.625% Convertible Perpetual Preferred Stock; \$.01 par value; 250,000 shares issued and outstanding (at liquidation value of \$250, net of issuance costs)	246	—
Commitments and Contingencies		
Stockholders' Equity		
4% Convertible Perpetual Preferred Stock; \$.01 par value; 420,000 shares issued and outstanding at December 31, 2005 and 2004 (at liquidation value of \$420, net of issuance costs)	406	406
Common stock; \$.01 par value; 100,048,676 and 100,041,935 shares issued and 80,701,888 and 87,041,935 outstanding at December 31, 2005 and 2004, respectively	1	1
Additional paid-in capital	2,431	2,417
Retained earnings	261	197
Less treasury stock, at cost; 19,346,788 and 13,000,000 shares as of December 31, 2005 and 2004, respectively	(663)	(405)
Accumulated other comprehensive income/(loss)	(205)	76
Total stockholders' equity	2,231	2,692
Total Liabilities and Stockholders' Equity	\$ 7,431	\$ 7,864

See notes to consolidated financial statements.

9.6 Variable Interest Entity Analysis – No Delmarva Consolidation Required

The RFP specifically requires bidders to provide their conclusion and supporting analysis with respect to whether a project proposal would, under FIN46R, result in Delmarva having to consolidate the proposed project on its books, by virtue of entering into a long-term PPA as "Buyer" with respect to the capacity and related energy produced by that project, up to 400 MW.

NRG engaged both its internal and external accounting experts to review and analyze this issue in detail and the results of this effort are set out in this Section 9.6. The clear conclusion is that if it entered into a [REDACTED] PPA for 400 MW of capacity and related energy from the Indian River IGCC Project, **Delmarva would not be required to consolidate the project**, for the following reasons:

[illegible]

10 Project Management

10.1 NRG Experience

Founded in 1989, NRG is a competitive wholesale power generation company, primarily engaged in the ownership and operation of 52 power generation facilities and the sale of energy, capacity and related products in the United States and internationally. NRG's global portfolio of projects totals over 24,500 MW and represents a diversified generation portfolio, distinguished by its range in geography, fuel source and dispatch level.

NRG's operations include competitive energy production and cogeneration facilities, power marketing, district heating and cooling delivery and thermal energy production. NRG's portfolio of projects is primarily in North America, but the company also has locations in Europe, Australia and Latin America. Its projects use a wide array of fuel sources including fossil fuels (natural gas, oil, and coal) and nuclear.

NRG has been safely developing, acquiring and operating power plants since its founding and remains focused on safe and reliable operations as its top priority. Our employees' diligence has resulted in significantly lowered unit forced outage rates while increasing our safety record. This same culture of performance and safety excellence will pervade the development, construction and operation of the Indian River IGCC Project. NRG is proud to provide reliable service to our customers and PJM, as well as a safe work environment for our employees.

NRG runs one of the largest coal procurement operations in the US. Through its Commercial Operations group, NRG currently purchases approximately 36 million tons of coal per year and is the second largest buyer of low sulfur Powder River Basin coal in the country. NRG manages a fleet of over 6,800 rail coal cars and maintains approximately 97% of the company's transport needs under firm contract two years forward.

[REDACTED]

[REDACTED]

NRG has developed and acquired thousands of megawatts of power projects over the last decade for which it has mobilized financing and can do so again for the Indian River IGCC Project. NRG is one of the leading generators in its sector, attracting significant attention and investment from Wall Street. Earlier this year, NRG acquired Texas Genco (now NRG Texas) for \$5.8 billion. This transaction added approximately 10,000 MW to NRG's portfolio in a move widely seen to bring together two extremely complementary businesses to produce greater overall value. NRG is also in late-stage development of an additional solid fuel unit at its Big Cajun II power plant: a billion dollar project that will add 700 MW of new generation in Louisiana.

A listing of NRG's existing generating plants is provided in Table 10-2 at the end of this Section.

10.2 NRG & PJM

PJM Interconnection plays a vital role in the U.S. electric system. As a regional transmission organization ("RTO"), PJM coordinates the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia to ensure reliability and competitive markets of the largest centrally dispatched electric grid in the world.

The scope of PJM's operations is extensive (all numbers are approximate):

- Population - 51 million;
- Generating sources - 1,271, with diverse fuel types;
- Generating capacity - 164,634 MW;
- Peak demand – 144,796 MW (2006);
- Annual energy delivery - 728 million MWh (2005);
- Transmission lines - 56,070 miles;
- Members/customers - more than 400; and
- Cumulative billing - \$52 billion since 1997 (as of 12/31/2005).

NRG is an active market participant and a full member of the PJM Interconnection, LLC. NRG has been a member of PJM since its acquisition of assets in that market. NRG routinely participates in PJM committees and working groups to advocate and negotiate a transparent and fair market structure, as well as to ensure reliable system operations. On a daily basis, NRG interacts with the PJM markets and injects electricity and reactive support into the grid whenever called upon. NRG is active in PJM and votes at all meetings regarding recommendation of rule changes, tariff language, reserve margins requirements, budgets, etc. NRG facilities located in PJM are shown in Table 10-1.

Table 10-1 NRG Plants in PJM

	Location	Net MW Owned	Fuel
Conecough	New Florence, PA	64	Coal/Oil
Indian River	Millsboro, DE	737	Coal/Oil
Keystone	Shelocta, PA	63	Coal/Oil
Vienna	Vienna, MD	170	Oil
Dover Energy	Dover, DE	104	Coal/Natural Gas
Total	5 Locations	1,138	

The primary PJM committees that NRG is involved with are as follows:

Members Committee ("MC") – The MC is attended by all members, executive PJM representatives as well as the PJM Board. The MC reviews and decides upon all major changes and initiatives proposed by lower level committees and user groups.

Markets Reliability Committee ("MRC") - Responsible for ensuring the continuing viability and fairness of the PJM markets. The MRC also is responsible for ensuring reliable operation and planning of the PJM system. The MRC works closely with, provides direction to and reviews recommendations from the MIC, PC and OC.

Markets Implementations Committee ("MIC") – Originally created as a working committee, the MIC has evolved into a "think tank" committee for proposals and analysis of existing and potential market structures. The MIC initiates and develops proposals to advance and promote competitive wholesale electricity markets in the PJM region for consideration by the Members Committee.

Operating Committee ("OC") - The OC votes on motions brought by the working groups that focus on system operational issues. The OC reviews system operations from season to season, identifying emerging demand, supply and operating issues.

Planning Committee ("PC") - The PC provides direction on system reliability, security, planning strategies, economy of service. The PC provides system planning strategies and policies as well as engineering designs for the bulk power system. Also inherent in this committee are load forecasting design and installed reserve margin requirements.

Other high level committees NRG participates in include:

- FC - Finance Committee;
- MMAC – Market Monitoring Advisory Committee;
- TAC – Tariff Advisory Committee; and
- TEAC – Transmission Expansion Advisory Committee.

Working Groups that report to these higher level committees and in which NRG participates include:

- 180-Day Stakeholder Process Working Group (180DRWG);
- At Risk Generation Subcommittee (ARG);
- Black Start Service Working Group (BSSWG);
- Credit Working Group (CWG);
- Data Management Working Group (DMWG);
- Demand Side Response Working Group (DSRWG);
- Governance Working Group (GWG);
- Long-Term FTR Working Group (LTFTRWG);
- Marginal Losses Working Group (MLWG);
- Market Settlements Working Group (MSWG);
- Reactive Services Working Group (RSWG);
- Regional Planning Process Working Group (RPPWG);
- Reliability Planning Criteria Working Group (RPCWG);
- Reserve Markets Working Group (RMWG);
- Reserve Requirement Assumptions Working Group (RRAWG); and
- Voltage Profile & Reactive Margin Working Group (VPRMWG).

10.3 Project Participants

NRG has been working with numerous parties that will likely remain part of the long-term project execution team after NRG has secured a long-term PPA for 400 MW with Delmarva. To date, NRG [REDACTED] not make a final decision on gasification technology, turbine technology, or prime contractor until later in 2007. An overview of key project participants is provided in Figure 10-1.


```

graph TD
    NRG["NRG  
(Sponsor, Project  
Manager, Owner &  
Operator)"]
    CM1["Construction Management"]
    OM1["Operations & Maintenance"]
    CM2["Construction Management"]
    OM2["Operations & Maintenance"]
    CM3["Construction Management"]
    OM3["Operations & Maintenance"]
    CM4["Construction Management"]
    OM4["Operations & Maintenance"]
    CM5["Construction Management"]
    OM5["Operations & Maintenance"]

    NRG --- CM1
    NRG --- OM1
    CM1 --- CM2
    CM1 --- OM2
    OM1 --- CM3
    OM1 --- OM4
    CM2 --- CM4
    CM2 --- OM5
    OM2 --- CM5
    OM2 --- OM6["Operations & Maintenance"]
  
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[illegible]

Pages 161-181 have been
redacted in their entirety.

11 Operations and Maintenance

11.1 Overview

NRG has a proven track record in power plant operations. NRG currently operates 52 plants located across 10 States in the US representing almost 23,000 MW of installed capacity (in addition to our international fleet in Germany, Brazil and Australia). Three key fundamental focus areas are reflective of NRG's O&M philosophy:

- Maximum focus on safety;
- Minimized forced outage of its facilities; and
- Focus on fleet-wide maintenance.

Consistent with NRG's core values, a crucial component of our operations program is safety. NRG is very proud of its safety performance and has an unrelenting focus on this aspect of its business. The safety program is based on twelve essential elements including demonstrated management commitment and employee participation. For the first three quarters of 2006, NRG's OSHA Total Recordable Injury Rate was 2.1, which is 36% better than the industry average.

NRG continuously works to minimize forced outages, employing an intensive maintenance management program. The program's success is evidenced by a fleet-wide average commercial availability exceeding 90% with an equivalent forced outage rate of 5.49% (2006 YTD).

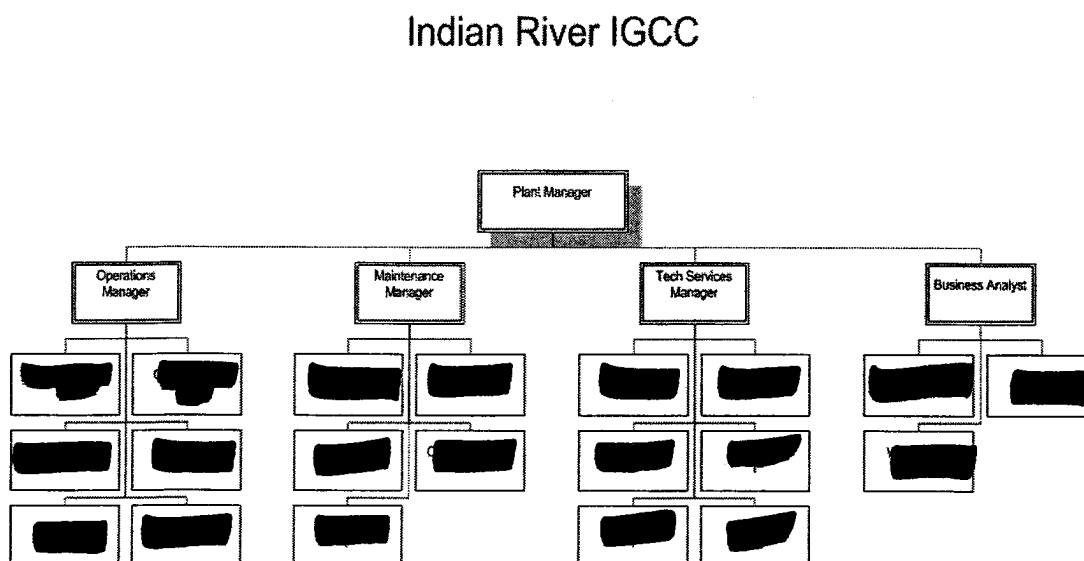
NRG employs an advanced work order management system to manage its facilities' maintenance outages. This system helps facilities identify, prioritize and plan their work; route that work for approvals; execute the requisite work orders; and analyze that work in terms of dollars spent, outage times, and failure rates. In addition, plants are able to review maintenance history on individual pieces of equipment by cost, work scope, and failure modes. The ability to track maintenance history by individual equipment pieces facilitates better knowledge transfer should employees leave the organization. The system also tracks spare parts across the NRG fleet, enabling a more efficient transfer between plants. NRG achieves tremendous best-practices economies of scale through its ability to immediately identify and leverage lessons learned and other information across its 52 plants.

NRG's current portfolio contains a broad mix of fuel types which gives NRG the experience and ability to effectively operate nearly any power production facility. However, given the relative level of complexity in running the gasification process with an IGCC facility, NRG clearly recognizes the need for special emphasis on O&M as it pertains to the Indian River IGCC Project. To that end, NRG intends to place the gasification technology provider in a key role in operations training and management during the development, construction, and post-completion phases. NRG will retain the responsibility of managing the gasifier operations, but will utilize the technology provider's existing knowledge base and employ a best practices approach to overall O&M at the Indian River IGCC Project.

[REDACTED]

Plant staffing plans for the Indian River IGCC Project have been developed with key skills identified. The plant will require about 100 operations personnel, from the position of Plant Manager to Plant Operators and I&C Technicians. To the greatest possible extent, operations staff for the Indian River IGCC Project will be sourced from the local area. Figure 11-1 shows the organization chart of the proposed plant staffing.

Figure 11-1 Plant Staffing



11.2 Pre-Commercial Training

An extensive training program for all levels of the operations personnel will be implemented under the guidance of the gasifier technology provider. The operational characteristics of an IGCC facility require a mixture of qualified operators for the gasification block including gas clean up, as well as power plant operators for the power block. The Balance of Plant and Utilities sections of the plant will be very similar to a typical power plant.

The training program will consist of the following:

- *Classroom Technology Training* – A series of classes will be organized covering fundamentals of the IGCC technology and its operational requirements. Comparisons will be discussed with existing power plants and refinery/chemical operations. One of the key focus areas will be operational safety and safety systems.
- *Computerized Simulator Training* – The computerized simulator mimics the actual control consoles for an IGCC plant, allowing for thorough training through the simulation of a wide range of operational situations. This has proven to be a very effective part of the training program for operators at the other IGCC facilities worldwide and NRG will seek to capitalize on this training practice for the Indian River IGCC Project.

- *Actual Plant Training* – The gasification technology provider will train key operators at an actual operating facility. Several IGCC facilities across the world are available for this type of training. This “hands on” training will be essential for selected positions within the operations organization in order to fully leverage the existing experience at other operating projects and to achieve world-class operations results at the Indian River IGCC Project.
- *Plant Maintenance* – Detailed classroom and hands-on training will be provided to plant maintenance personnel in unit operation and safety, materials identification, equipment repair.

In addition to the training program outlined above, technical experts from the gasification technology provider and the power block equipment supplier will be contracted to serve as technical advisors to the project during the startup, commissioning and initial operations of this facility. Technical advisors will work side-by-side with the operators to complete the technology transfer to the project operations staff. The Indian River IGCC Project operations staff will have resources readily available to enhance critical system designs and operational procedures.

Downtime due to “lost time work injury” is disturbing and regrettable on a human level. NRG’s paramount aim is for our employees to go home injury free every night. As a result, safety training and awareness are of the utmost importance at NRG. Operational procedures will be developed to ensure the safe startup, commissioning and operations of the IGCC facility. The operations staff will be involved in the safety review during the design phase of the plant, before any construction begins. The following are systems which will be reviewed in detail for safety-related design criteria:

- Gasification Block;
- Syngas Cleanup;
- Power Block;
- Chemical Treatment and Handling; and
- Control Systems.

A thorough Hazardous Operations exercise and Safety Critical Device review will also be conducted once the key detailed design documents have been completed. In addition, a detailed Management of Change program will be developed and implemented at the Indian River IGCC unit to enhance the overall safety program.

11.3 Post-Commercial Training

The Indian River IGCC Project will likely seek separate Long Term Service Agreements (“LTSA”) covering the gasification block and the power block. The term of these LTSAs will typically cover the period of startup through the first planned major maintenance period (i.e., the initial five to six years of plant operations).

An important area identified from experience with current IGCC facilities is the development and implementation of a thorough, preventive maintenance plan. This includes the identification of the required tools, facilities, spare parts inventory and personnel to successfully manage the maintenance of the complex processes within an IGCC facility.

A detailed maintenance plan will be developed which covers the following areas:

- *Equipment maintenance intervals* – This will determine the type, quantity and numbers of spare parts required to be stored and consumed at the plant.
- *Spare Parts Inventory* – Normal stocking levels of spare parts to be warehoused at the facility will be determined. Economic Order Quantities and Re-Order Points for each critical spare part will also be identified.
- *Staffing requirements (company and contract personnel)* – A maintenance philosophy will be determined during the early development phase to include any facilities or equipment required for implementing a successful preventive maintenance program.
- *Control Systems and Data Capture* - A key to the success of a preventive maintenance program in an advanced facility (such as an IGCC plant) is the identification of the critical data items that need to be collected and stored from the Distributed Control System. The collection of these data sets from the beginning of the operations can facilitate critical trending analysis which, in turn, helps operators identify maintenance issues before they occur, optimizes the frequency of maintenance intervals, and efficiently tracks the spare parts inventory.

NRG and its technology partners will continue to learn from the available knowledge-base gained from the operations of the existing IGCC facilities worldwide. The goal is to achieve world-class standards in operating an IGCC facility in a safe and reliable manner.

11.4 Planned Maintenance

In anticipation of outage time each year, planned maintenance is expected to include the following:

- *Annual* - [REDACTED] each gasification and power block train will be shut down for [REDACTED] cleaning, inspection, gasifier burner replacement, replacement of high wear valves, ceramic candle replacement, and other light maintenance;
- *Every* [REDACTED]
 - Each gasification train will be shut down for [REDACTED] for more extensive maintenance including replacement of high wear piping;
 - A [REDACTED] hot gas path inspection will be performed on each combustion turbine;
- *Every* [REDACTED] - *Every* [REDACTED] utilities systems maintenance will be performed ; and
- *Every* [REDACTED] - *Every* [REDACTED] total plant outage will be required for major overhaul of the combustion and steam turbines.

Maintenance practices will ensure sustained achievement of annual average availability exceeding [REDACTED]. Actual availability will vary on an annual basis due to planned maintenance activities that are a function of operating hours. The factors affecting forced outages in earlier IGCC projects have been addressed and are well understood by today's technology providers and engineering contractors. NRG has already taken steps to aggressively leverage this knowledge in the design, execution and operation of the Indian River IGCC Project and will continue to do so to ensure a successful world-class project.

11.5 O&M Costs

NRG has engaged a series of consultants and engineering firms with direct experience in operating, designing or constructing gasification systems and/or IGCC projects. Most recently, NRG vetted these costs and related assumptions with [REDACTED] engineering team as well as the engineering team of [REDACTED]

A summary of the Projects anticipated O&M costs are listed below in Table 11-1.

Table 11-1 Estimated O&M Costs

	Cost
Capacity	400 MW
Availability Assumption	[REDACTED]
Variable Fuel	[REDACTED]
Non-Fuel Variable O&M	[REDACTED]
Fixed O&M	[REDACTED]

11.6 Safety History & Program

NRG's fundamental concept is, "If we do the right things in Safety - and do them well - then the number of accidents we experience, and the subsequent human suffering, will be minimal." Injury rates at NRG have consistently been significantly below comparable industry averages. A January 2000 Occupational Safety Assessment conducted by MARSH Risk Control Consulting noted: "NRG could be used as a benchmark for measuring most companies' progress toward developing best safety practices."

How the Program Started

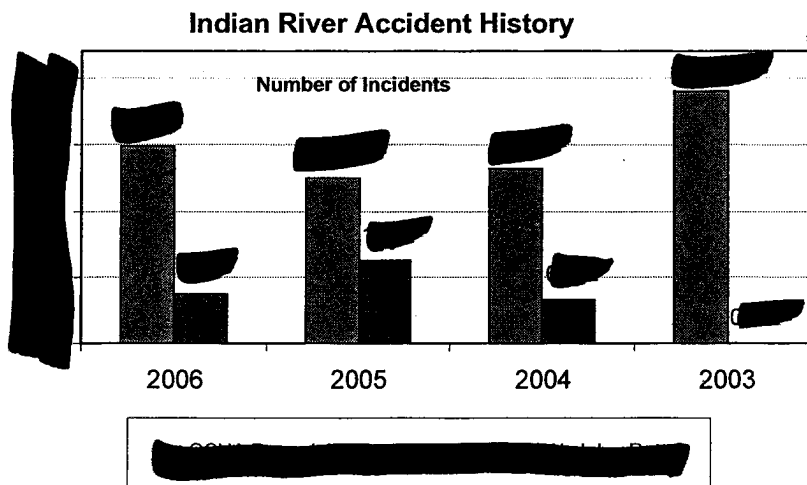
In the early 1990s, NRG's chairman, president and CEO challenged the Safety department to develop and implement an aggressive, proactive, world-class occupational safety and health program. Each facility's program was to be action-oriented, employee-driven and clearly communicate that safety of employees is the company's top priority. The goal of the safety program was designed to be - and continues to be - to facilitate an injury-free workplace.

Developing the Program

To meet the chairman's challenge, the Safety department first analyzed the types of accidents and injuries that occurred in the power generation sector and the causes of the accidents. The next step was to review "best practices" in safety and health from the power generation business, and in other industries in the US and around the world. With that knowledge, the Safety department simplified best practices and applied them to power plants and accident experience by:

- Defining the overall safety program in terms of goals, objectives, elements and specific activities to be completed;
- Assigning specific safety responsibilities to employees, line supervisors and managers of facilities and in the corporate offices;
- Scheduling safety activities to ensure that each safety program activity is completed in a timely manner consistent with optimum accident prevention practice;
- Reporting safety activities weekly to provide the impetus for, and to ensure that all safety activities are appropriately completed; and
- Evaluating individual safety performance quarterly. We conduct quantified safety performance reviews, based on actions to prevent accidents, not the number of accidents that occurred. Our program is designed to define safety expectations, carefully evaluate performance in a meaningful way, provide feedback and recognize and reward individual performance and contributions.

Figure 11-2 Safety Statistics for the Indian River Facility



NRG's Program Today

Today, NRG implements a standard safety program in each facility we operate. This includes:

- A basic safety reference library is provided as a source of safety knowledge for all facilities.
- All accidents and near misses are investigated, and information is communicated to all NRG locations to prevent similar events. Reports on these incidents serve as an important safety awareness tool.
- Plant employees are required to conduct at least one job safety analysis per month. All supervisors are required to conduct at least one formal safety contact with each employee each month.
- Supervisors and managers must complete at least one formal safety observation each week, and safety awareness videos are shown to employees on weeks with

no formal group safety meetings or training sessions. These activities are excellent communication tools to maintain safety awareness and minimize accidents due to employee action.

- Supervisors and managers are required to conduct weekly safety walkthroughs. Nearly 100 safety inspection checklists must be completed as scheduled, in addition to internal and external audits of key safety issues. NRG also has a safety action item system that references, assigns and tracks required safety actions to minimize accidents due to facility conditions.
- There are 28 key safety issues - covering all aspects of plant safety - included in NRG's safety program. Examples include hearing conservation, respiratory protection, lockout/tagout and machine guarding. A designated employee in each facility is responsible for each key safety issue. Issue reviews, audits, follow-ups and training are conducted annually.
- Formal safety meetings - with standard agendas across all facilities - are conducted monthly by supervisors and managers for each work group.
- Record-keeping systems for all safety program activities are provided by the corporate Safety department and are maintained by designated employees at each facility. Quarterly safety performance reviews are conducted with supervisors and managers at each facility plus all NRG management. These reviews are the primary method of communicating, managing and maintaining our safety program.

At NRG, safety is one of our core values. We are proud of our world-class safety program and take proactive steps to ensure that safety is our top priority. This is borne out in the safety statistics show in Figure 11-2 and in the short list of recordable and lost work day accidents listed in Table 11-2.

11.7 Safety Incentive Program

Each NRG plant has an objective to improve its Total Recordable Injury Rate. This is a part of the Annual Incentive Plan (Bonus) for management and supervisory personnel at the plant and involved in our corporate Operations function. We also measure how effectively the plant implements Twelve Essential Elements. These are:

1. Visible Management Commitment;
2. Working Safety Policy;
3. Employee Involvement;
4. Safety – A Line Organization Responsibility;
5. Aggressive Safety Goals and Objectives;
6. High Standards of Performance;
7. Supportive Safety Personnel/KSI Holders;
8. Motivation;
9. Comprehensive Injury and Incident Investigations;
10. Effective Two-way Communication;
11. Continuous Safety Training; and
12. Safety Observations and JSAs.

A score is given for each element and an overall score for the plant.

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in its entirety.